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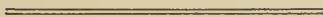
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THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. I.

JUNE, 1876.

VOL. V.

The Recent Meeting at Manchester,

The recent meeting at Manchester can scarcely be called a success, although it doubtless was very useful in enabling a number of gentlemen to fully discuss the merits of a question in which every one is deeply interested.

It is obviously a difficult thing to decide what course of policy will be most likely to obtain the support (for purposes of reform) of those whom the Royal College of Surgeons will not admit to examination.

This way of putting the matter will probably be regarded as a very harsh one, but we believe it really expresses in the most concise manner the cause of the present dead-lock in dental politics. There are two things that are tolerably clear—one is that the Government will never grant a *Protective* Bill to those practising dentistry, and the other is that the Royal College of Surgeons will, at no period, admit to examination without curriculum all those who are at present practising as dentists without any qualification.

Nor do we see how the College could, with any justice, adopt the course advocated by Dr. Waite, and it is even doubtful whether the sudden creation of twelve hundred and sixty Dental Licentiates would in any material way advance the position of the Dental profession.

That all those who were in practice prior to 1859, or, better still, prior to 1863, should be admitted we have steadily

advocated; that all vexatious regulations in regard to advertising should be cancelled we also desire; but, having gone thus far, we can see no reason for admitting all those who are now in the profession, irrespective of their mode of conducting their practice, and without reference to their technical education.

Such a measure, if successfully carried out, would, we submit, be damaging rather than beneficial to the entire Dental profession. Those who are competent to practise now without a qualification would be no more highly esteemed if they possessed one, whilst those who are really incompetent to practise now would be raised to a common level by being permitted to take a common qualification. In England, at any rate, we cannot create a profession in ten years. The work to be surely done must be slowly done; and those who have the real interests of their profession at heart will do well to avoid that haste which is said to make the least speed.

William Perkins, L.D.S.

On Monday, May 22nd ultimo, at 34 Baker-street, Portman-square, died William Perkins, aged 67 years, one of the oldest of metropolitan practitioners, and a man highly esteemed and respected by those to whom he was best known. As a youth Mr. Perkins became a pupil of Mr. James Harley, of Davies-street. Subsequently he acted as assistant for a short time to Mr. Lemale and to Mr. Hutchings, of Hanover-square (all these gentlemen are now dead), and for a few years afterwards practised in partnership with Mr. Aikes in Paris and at Nice. This partnership being dissolved, Mr. Perkins returned to England and commenced practice in London, in which he continued to the close of his life. During the course of the stirring events which the reformatory movement of 1856 gave rise to Mr. Perkins was often found taking a prominent part, and a certain brusqueness of manner and speech may occasionally have given offence at these times, but a more thoroughly

upright and conscientious man never existed, nor one of a kinder heart. In the practice of his profession his skill was considerable and much appreciated. Mr. Perkins occupied some important official positions in connection with the College of Dentists, and at the amalgamation with the Odontological Society was elected a vice-president of the united body. He was lecturer on dental mechanics in the Metropolitan School of Dental Science and dental surgeon to the National Dental Hospital. In parochial matters he took some interest, and was an able member of the Marylebone Vestry, which body, on learning of his decease, passed a unanimous vote of condolence with his widow.

Of late years Mr. Perkins suffered considerably from asthma, and also from the shock occasioned by the loss by death of his three children, upon whom all the affection of a warm heart was devoted—the last of these, his only son, himself a dentist, and destined to succeed him, died some eight months ago. Since this last calamity his spirit seemed completely broken, and he breathed his last as above stated, quietly however, in peace, and with the soothing influence present of his beloved wife, now left indeed bereft, although not uncared for.

We know that the loss of William Perkins will be severely felt by a wide circle of professional and other friends. In every relation of life he was a worthy man and one of no small intellectual power and ability. Mr. Perkins is succeeded in his practice by Mr. Arthur Canton.

The Month.

AMALGAMS.

DEAR SIR,—As there is a large amount of amalgam used in England, perhaps a description of a new and expeditious method of mixing the materials may be of interest to some of your readers. If you agree with me, will you give place to the following description :—Obtain a circular piece of thin sheepskin three inches in diameter; place this in the palm of the left hand, and in the centre of the leather put the mercury and alloy; next bring the edges of the leather together to form a bag, in the lower part of which (corresponding to the centre of the sheepskin) will be the materials to be mixed. Now grasp the bag thus formed just above

its contents between the thumb and first and second fingers of the right hand, and rub it briskly against the palm of the left hand. In less time than is required to describe the operation the union is effected. Since Dr. J. L. Williams showed him this method the writer has used it constantly, and from his experience has no hesitation in saying that it is the most expeditious plan he has ever tried.—Yours truly,
 WILLIAM H. ROLLINS.

CONGENITAL CLEFT PALATE TREATED BY THE APPLICATION OF STRONG NITRIC ACID, AND WITHOUT OPERATION.

Mr. Mason has at the present time under observation at St. Thomas's Hospital several interesting cases of congenital cleft palate, which he is treating by the application of strong nitric acid alone, and consequently without the use of the knife. The ages of the patients vary from a few weeks to several years. Mr. Mason thinks that this method of effecting union is especially applicable to cases in which the cleft is of average extent, and even where the hard palate is partially implicated. In more severe instances the ordinary operation may be required. Mr. Mason finds that the application of the acid is attended with no pain or inconvenience whatever to the patient, and although the cure is more slowly accomplished, it has the advantage of being sure, and of completely closing the fissure in the most perfect manner, without the risk of the parts giving way, either wholly or partially, as too often happens after the usual operation of staphyloraphy. A further gain seems to be that the cases may be dealt with as out-patients, as in all the examples now under notice. Mr. Mason, after many trials, prefers the strong nitric acid to any other form of caustic. We shall continue to watch the progress of these cases, and give the results on a future occasion.—*Lancet*.

THE REPORT OF THE MANCHESTER MEETING.

We are indebted to the courtesy of the Editor of the *British Journal of Dental Science* for early proof-sheets containing the report of the Manchester Meeting.

CHILIAN COMPLIMENT TO A PHILADELPHIA MANUFACTURER.

The authorities of the Chilian International Exhibition at Santiago have awarded to H. D. Justi, of Philadelphia, a first-class medal and diploma for his collection of artificial teeth exhibited there in 1875. Medal and diploma are now in his possession.

TOOTH-DRAWING AT THE ANTIPODES.

Perhaps some of our friends in the dental profession will thank us for the following clipping from the *Melbourne Medical Record*, as illustrating the ease with which teeth may be drawn with the aid of forceps:—"A Melbourne doctor, who is very fond of giving calomel, asked a patient, who had been taking it in pretty large doses for several days, if his teeth were affected. 'I don't know,' hissed the poor slobbering patient, 'but I have brought all I had in this paper for you to see.'"

On the Microscopical Structure of Fossil Teeth from the Northumberland True Coal Measures.

By W. J. BARKAS, M.R.C.S.E., L.R.C.P. Lond.

CHAPTER XXIII.

(Continued from page 534.)

Genus.—Archichthys (Hancock and Atthey.)

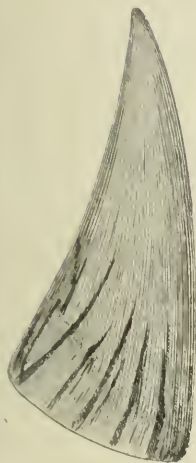
The remains of this fish have only been found in the shales of the Northumberland Coal Measures; but there is said to be evidence, although it has not yet been published, that they are present in the coal shales of other districts, and even in lower Carboniferous strata, than the True Coal Measures; but whether this is so or not I have not any means of judging. All my specimens are from this district. The genus, of which only one species is known, *Archichthys sulcidens*, was founded by Messrs. Hancock and Atthey upon teeth and certain bones, which were described in the "Annals and Magazine of Natural History" for April, 1870, and in the "Transactions of the Northumberland and Durham Natural History Society," Volume IV. Concerning the component parts of this fish more has been ascertained than we know about *Rhizodus*, *Strepsodus*, or *Orthognathus*; but we are not so well acquainted with it as with *Rhizodopsis*. The characters of the fish, according to our present knowledge, are as follows:—It possessed a mandible and premaxilla, armed with two sets of teeth, laniary and serial; two large principal jugular plates, and probably two median; exceedingly large operculæ; very large cycloidal scales; the head-bones and scales, strongly sculptured. These features belong apparently to the *Glyptodipterini*; in fact, if we may judge from the similarity of the scales to those of *Rhizodopsis* in everything except size, we can have very little doubt about the classification of *Archichthys*.

With regard to the mandible and premaxilla, very little, if any, information has been obtained since the publication of the above papers of Messrs. Hancock and Atthey. I shall, therefore, quote what they have said concerning these jaws in the "Transactions." The jaws were found upon a slab of shale, in which were imbedded the remains of a crushed head. "A large portion of a mandible, measuring upwards of ten inches long, lies in the middle of the mass, with the inner surface exposed, and with the alveolar border

turned over; so that several of the teeth are seen, measuring from three-eighths to four-eighths of an inch in length. This fragment (for large as it is, it is but a fragment) has lost both extremities. The anterior extremity of each mandibular ramus is likewise present on the slab, and has a large laniary tooth in front, and several of the small teeth behind. One of the large teeth is nearly perfect, and measures two inches in length, though the extreme apex is deficient, and is nearly an inch wide at the base. The other laniary tooth has been apparently equally large, but merely its stump remains. The largest of the small teeth are about half an inch long; they appear, however, to have been pretty regular in size, and are placed a little apart from each other. These two mandibular fragments are each upwards of two inches long; so that if one of them be joined to the large portion of the mandible already described, we have the dimensions raised to twelve inches; but as we have no means of determining how much of the proximal extremity is wanting, it is difficult to say what was the real length of this formidable jaw when perfect. Its massiveness, however, is sufficiently evident, as the bone of the anterior fragment is nearly an inch thick. The left premaxilla is also very well displayed, lying across the large mandibular fragment. It is three inches and a half long, and one inch and three-quarters wide. The anterior extremity is rounded; and close to the front margin there is, as in the mandible, a laniary tooth, which is small, however, in comparison with that of the latter; it is seven-eighths of an inch in length, and is proportionately narrow. This tooth is succeeded by about twenty minute teeth, one-eighth of an inch long, or thereabouts, which are very regularly arranged at a little distance from each other." In the description of a mandible that he gives in the "Annals" he further says "the whole surface of the dentary bone is covered with small rough tubercles, which have a tendency to run into lines, producing vermicular grooves."

The teeth (fig. xci.), it will have been observed in the above description, attain in some specimens to a great height—two inches. Mr. Atthey has described one in the "Annals" two inches and a half high, and I possess another two inches and one-eighth long; they are conical, obtusely pointed, and slightly recurved. A transverse section of the body exhibits a circular contour, the external surface is

Fig. XCI



Archichthys suadens
nat. size.

Fig. XCII



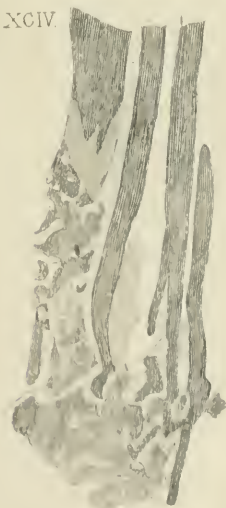
Archichthys sulcidens
Transverse Section of base.
mag. 10 diam.

Fig. XCI



Archichthys sulcidens
Transverse section of body of tooth
Mag. 10 diam.

Fig. XCIV



Archichthys suadens
Vertical section of base of tooth
Mag. 10 diam.

highly enamelled, and presents a glistening aspect. At the base it is much plicated, and the rounded convolutions are further ornamented by numerous fine longitudinal striæ, which proceed towards the apex, but they gradually disappear as they depart from the fluted base, leaving the summit of the body perfectly smooth and shining.

The only other teeth belonging to the Coal Measure fishes of Great Britain with which these teeth could be compared are those of *Rhizodus*; but it is not possible to confound the two, because, as stated by Messrs. Hancock and Atthey in their paper in the "Annals," "it is pretty certain that they never attain the dimensions of those of *Rhizodus*, from which they can always be distinguished by their rotundity, the total absence of cutting edges, and the fine striation of the surface, though they are folded at the base in a manner similar to those of that great enigma."

The microscopical appearances of the structures entering into the formation of these teeth has not been referred to by either Mr. Atthey or Mr. Barkas, nor has any other palæontologist described them. It is very difficult to procure good sections for examination on account of the exceeding fragility of the teeth in their fossilized states. Transverse sections, however, can be more easily cut than vertical, especially when taken from the base.

A transverse section of the base near the junction of the tooth with the jaw (fig. xcii.) presents a very convoluted character, the external grooves being exceedingly deep and comparatively and uniformly wide throughout their whole course. Into these deep external furrows the osseous tissue of the jaw enters. The internal depressions are also deep; but they are invariably narrowed at their internal orifice by the co-adaptation of the opposite folds of the dentinal convolution. But at their external extremity they suddenly dilate into a comparatively large cavity which runs down the centre of the convolution, like a branch from the pulp in the pulp cavity of the body, until the folds become divided into distinct roots. It was probably this appearance that caused Professor Owen to say, while speaking of the teeth of *Megalichthys*, that the pulp cavity divided into a number of branches at its base, each division passing down the centre of a root. This section, however, shows most clearly that they are not descending branches at all, but that they are merely lateral processes of the pulp cavity

forced outwards by the encroachments of the internal folds of the dentine.

The body when cut in transverse section (fig. xciii.) is seen to possess an exceedingly small pulp cavity, much smaller in proportion to the size of the tooth than is the case in any other Crossopterygidean tooth from these Coal Measures that I am acquainted with; a vertical section also exhibits this feature; its outline is generally circular, but many of the detached teeth are crushed laterally near the base, consequently the pulp cavity is often irregularly oval.

The dentine (figs. xcii. and xciii.) is pierced by a great number of calcigerous tubes which measure at their origin from one-ten thousandth to one-twenty thousandth of an inch in diameter; they are only separated from each other by an interval equal to the diameter of one, sometimes two, tubes; as a result of this close approximation the tissue appears very tubular. The tubuli run perpendicularly to the periphery without presenting any curves either primary or secondary; at the basal part of the tooth they arise at right angles to the pulp cavity, but as they take origin nearer the apex they gradually assume a more upward tendency; they branch freely and in a dichotomous manner, the ramuli being given off at a very acute angle, they then proceed towards the external surface parallel to the main tube; they do not appear to inosculate to any extent. About from one-four hundredth to one two hundred and fiftieth of an inch from the periphery of this tissue there is a layer of minute radiating cells, into which the tubules pass, many of them terminating there, but the finer branches penetrate to the periphery and enter the enamel; the radiating cells give off minute tubules which inosculate with each other, thus forming a cellular stratum similar to the layer that lies between the cementum and the dentine of human teeth; in some specimens there is occasionally a second layer of still more minute cells nearer the circumference, this stratum is most marked in the convolutions of the base. Throughout the dentine of the base and body of the tooth run several series of contour lines (fig. xcii.) which vary in each in the clearness of their definition, the variation being solely due to the greater or lesser abruptness of the planal curves that produce these markings; in none of the specimens that I have examined are there any cellular spaces similar to those we saw in the contour lines of the teeth of *Megalichthys*.

The roots (fig. xciv.) present characters similar to those of all the other Saurodipterines and Glyptodipterines that I have described; I shall therefore not dwell upon them. I have given a figure illustrating the mode of the termination of some of the roots of a tooth of this genus as shown by a vertical section taken from a point below the division of the convolutions.

The enamel is a very thick layer, but it varies in its uniformity according to the portion of the tooth that is examined and the direction in which the section is cut; transverse sections are the best for microscopical observation of this tissue in those teeth that are not tipped like those belonging to *Lepidosteidæ*, and a series should be made from different parts between the base and the apex. A transverse section of the base taken just above the junction of the tooth with the bone, shows the enamel beautifully marked externally with alternate ridges and furrows of considerable depth and height (fig. xciii.), but only the enamel is thus affected, the dentine being perfectly smooth at its circumference; the enamel will also be observed to dip into the grooves formed by the folding of the dentine, but when it has fairly entered the depression it loses its rigid character and becomes uniform in thickness; as it proceeds deeper it gradually thins away and disappears before the bottom of the groove has been attained. As these transverse sections are carried up towards the apex, the ridges and furrows gradually lessen in height and depth until near the point they are completely obliterated, and the tissue is of uniform thickness. The depth of the enamel at the ridges is the true thickness of that tissue and corresponds to that of the unstriated portion of the tooth; the depth of the ridges averages one-seven hundredth of an inch, while at the bottom of the depressions it measures about one-two hundred and fiftieth of an inch. In a vertical section the enamel will vary in thickness according to whether the section be taken through a groove or a ridge. The enamel is clear and transparent and the terminal dentinal tubules penetrate into it and form an exceedingly delicate lace-work appearance by their interlacing and anastomoses. In all sections, whether transverse or vertical, there are numerous circular spots with a diameter equal to that of the tubules at their origin; these, therefore, cannot be the orifices of the terminal tubes which are less than one-thirty thousandth of an inch in diameter, besides it matters

not in which direction the section is made they are always circular; they are not deposits of carbonaceous matter like those black spots we observed in the enamel of the teeth of *Megalichthys* because they present optical effects that cannot be distinguished from those produced by transversely cut tubules.

NOTE.—Dr. W. J. Barkas left England for Australia in November last as Surgeon on board the *St. Osyth*, and arrived in Australia on New Year's day. He is now settled as Surgeon in Bombala, New South Wales. As he has with him a suitable collection of Coal Measure fossils with which to illustrate the remaining papers of the series it may be expected that those papers will be forwarded for publication when he has leisure for their preparation.—T. P. BARKAS.

Antiseptic Dental Surgery.*

By ASHLEY BARRETT, M.B. Lond., M.R.C.S.

When Professor Lister, of Edinburgh, introduced what was termed a novel method of treating surgical cases, he entitled this process "Antiseptic Surgery." It may be thus briefly described:—The wound, whether caused by accident or the surgeon's knife, was cleansed with water and was then coated with a mixture of carbolic acid and oil. This antiseptic dressing was renewed from time to time till the healing process was completed. It was asserted that wounds so treated healed, as a rule, by the first intention, and generally without suppuration. This desirable result was said to follow from the use of the carbolic acid; which, according to the theory, destroyed those atmospheric germs which, when in contact with the wounded surface, had they remained in a state of vitality, would have caused suppuration and destruction of tissue. These facts I have stated as evidence that by the surgeon carbolic acid is used for its antiseptic properties. Whether it be true or not that septic germs, as they are termed, are destroyed and rendered innocuous by the acid, it yet remains a fact that this substance has the property of preventing putrefaction in organic substances otherwise prone to decomposition. This I have seen demonstrated by the late Dr. Letheby, by whom a piece of raw flesh had been impregnated with the acid; in the meat so prepared no putrefaction occurred after exposure to the air for some weeks in summer. Now it is

* Read before the Odontological Society.

this faculty possessed by carbolic acid of preventing decomposition, that gives it to the dental surgeon its extreme value. To me it appears that the most potent argument against the use of arsenious acid for devitalizing purposes is that the dental pulp when dead is liable to putrefy. It is, I am aware, asserted that arsenic itself has such powerful antiseptic properties that the nerve once impregnated with it undergoes no subsequent septic change; yet I do not think this can be relied on.

The plan which for the last few years I have adopted, with such success that I shall be glad to know it is more widely practised, is thus: after the application of caustic, what remains of the dead nerve (left not longer than two or three days lest it putrefy) is cleared out of the tooth with a barbed instrument. In this condition the devitalized pulp, which for not more than three or four days has been under the influence of arsenic, gives forth no odour, and is quite free from putrefactive change. Now let the pulp-cavity and the interior of the fangs be filled with wool dipped in carbolic acid, over this may be placed the permanent metal filling. Thus we hold the organic particles left inside the tooth, the remains of the dental pulp, *in statu quo ante*; for although dead, what remains of the nerve is not putrescent.

If the use of arsenic be not followed by that of carbolic acid, I think there is great probability that the particles of nerve remaining shut up within the tooth will putrefy and cause further mischief.

But yet another condition exists in which good results from the use of carbolic acid. I refer to those cases in which periodontitis of a chronic character has existed; but, in order that I may express my views more clearly, I think it well to state briefly what to me appears to be the pathology of periodontitis. The course of events leading to the latter condition is somewhat complex: first we have the dental pulp irritated by advancing caries; then the pulp succumbs to a sharp attack of destructive inflammation and loses its vitality. Until the happening of this change, the patient suffers perhaps acute pain, and joyfully welcomes the relief from suffering which attends the death of his enemy; but the latter unfortunately is sometimes stronger in death than during life, and more apt then to cause trouble of a graver kind. The dead pulp putrefies, evolves sulphuretted hydro-

gen and carbonic acid gases and the various products of decomposition. If the pulp-cavity be opened so that these gases may escape into the mouth, no harm is done, the patient notices a nasty taste, and there the matter ends; but let this opening through the walls of the pulp-cavity have become closed through a particle of food, or by a filling of the dentist, or it may never have existed, then does the dead pulp evince its power for evil: the gas evolved during its decomposition, unable to escape into the mouth, forces its way through the openings at the end of the fangs into the socket in the alveolar process. Along with the gas particles of putrid nerve are extruded; and, in fact, a process of septic inoculation is actually being carried on. The result, of course, is inflammation and suppuration around the fang of the tooth, the formation of an abscess in the alveolar process; eventually, perhaps, necrosis of parts of the maxilla. The inflammation may be subacute,—then we find a gum-boil coming and going, the tooth sometimes being very tender and at other times less so; but in all cases of periodontitis we have one state which is constant, that is, the locking-up within the tooth of putrid nerve.

And I think a great step is made in Dental Pathology, now that we are able to assert with confidence that, whenever any of the signs of inflammation outside the tooth are present, they are caused by putrefaction going on within; that a tooth is never tender on pressure or tapping without containing a putrefied pulp; and that the gum-boil is evidence of chronic periodontitis, which latter is caused by escape from the tooth of particles of decomposed nerve; the death of the latter having resulted from antecedent caries.

This then being the pathology of periodontitis, whenever we find it existing, we can, it appears to me, relieve it only in two ways. Firstly and foremost, by making an opening through the walls of the pulp-cavity, so that the products of decomposition may escape into the mouth, instead of into the socket through the fangs. Secondly, by mopping out the interior of the tooth with carbolic acid, and thus again with this useful agent we may effect good; but, as a rule, a tooth requires three or six months of treatment with carbolic acid, and temporary plugs of wool, ere a permanent filling can be inserted. In fact, a channel for the escape into the mouth of putrid emanations should be kept open until they cease to be evolved.

Gentlemen, I thank you for the honour you have done me in listening to these remarks, in which I have tried to advocate the utility of carbolic acid, in *firstly* preventing putrefaction of the dental pulp, after being devitalized by arsenic; and, *secondly*, in arresting putrefaction of the dental pulp when once established, and so directly curing periodontitis; and I can only hope the importance of the topic may induce you to overlook any want of originality that may exist.

Report on Dental Physiology.

Read before the Michigan State Dental Society, March 29, 1876,

By D. C. HAUXHURST.

The earlier stages of dental development constitute a most difficult and intricate subject of investigation. I believe it is far easier to get a fair knowledge of dentine, enamel, cementum, and tooth pulp, as found in the mature tooth, than to get anything like an adequate knowledge of the progressive changes through which the tooth germ must pass during gestation, and afterwards, in order to become the perfect tooth. The building of a tooth, in all its perfection, involves the laying down of dense tissues from fluid or semi-fluid pabulum, by complex physiological processes, which not only affect the jaws and the fifth nerve seriously, but capable of profoundly modifying vital action in every part of the organism, while they are in progress. Hence it becomes us, as professional men, to put our students through a thorough course of dental embryology.

It is certainly important to the student to have accurate ideas of the nature, origin, and progressive development of the germs of teeth. And nothing will so much facilitate this as the actual dissection and study of these germs, from the time when they are first recognisable to the end of gestation, and indeed to the time of their eruption. And this is not so formidable an undertaking as might be inferred; I believe it to be quite in the power of every one.

To this end it is necessary to obtain a considerable number of fœtal jaws in all stages of development.

To study the developing teeth from books, and from books alone, is better than not to study at all. But in this way,

only a delusive and uncertain knowledge of the subject can be obtained. A real acquaintance with those formative stages through which the teeth must pass before they become the completed organs that we operate upon, can be best obtained by an examination of young jaws.

The real tissues must meet the eye; the fingers must handle and pull them to pieces; the delicate saculi must be turned out of their osseous beds; the young pulps must be hardened by re-agents and sliced for investigation, or mashed between the fingers by way of learning their consistency. If one of them happens to burst and discharge its contents into the face it is all the better; the accident will impress the fact that teeth in their earlier stages are more like soft cysts of organic matter than like teeth. At any rate, the real tissues must be procured and examined by every method that can help to reveal their characteristics.

I know of no better way to procure a supply of foetal jaws than to engage some honest butcher to save all the embryos that he meets with for say three months. This he will willingly do for a small sum, since they are a kind of stock that is not usually regarded as valuable. He will send them up undisturbed and completely protected by their natural membranes and the uterus. If you desire to inject the vessels preparatory to a study of the distribution of capillaries in the young pulps you will pay him a small sum extra for bringing the specimen warm, as the injecting fluid is best thrown in before the rigidity of death has come on.

A few weeks or months will furnish an abundance of material. The young jaws will be cut out and either examined immediately or put into bottles or jars and sent away for future examination. In the latter case they must be carefully labelled with the name of the animal from which taken, the proximate age, and the preserving fluid used. It is best to have good large labels or tickets, so as to give room for the successive dates at which the specimens are removed from one re-agent and subjected to that of another.

In general it will be better for the student to dissect several—a good many—of these embryonic jaws, noting all the physical characteristics before passing to the minute anatomy of the young pulp with the microscope. Curved

needles may be set in the stocks of old excavators to facilitate the examination.

If those specimens, which are designed for a first rough dissection, be subjected to the action of alcohol for a week or two, the pulpy mass which occupies the seat of the future tooth will be measurably hardened, and may be more easily taken from its osseous or cartilaginous cavity. If a crystal of hematoxylon be thrown into the alcohol used in hardening, the more recently formed tissues will be stained most deeply, and anatomical peculiarities will be brought out, that would escape notice by the ordinary method.

If the osseous walls that enclose the dental saculi are hard enough to interpose an obstacle to easy examination, the jaws may be thrown into a five per cent. solution of hydrochloric acid water for a time, and then subjected to the influence of alcohol as above; thus the bony tissue will be rendered soft and manageable.

I have found this preliminary decalcification particularly desirable to facilitate the study of the dental germs in the jaws of calves directly after birth, and from that time onward. The alveolar walls may be sufficiently softened so that they are easily sliced up, and the young germs exposed or turned out from their bed, under the milk set. For these specimens, however, I prefer a little additional treatment.

After softening with acid, they should be subjected to a 1 to 3 per cent. solution of chromic acid in water, and then transferred to alcohol. By this means a very manageable specimen will be produced, and one which by the aid of a pocket lens, a pair of needles set in handles, a jack knife, a razor, a copy of Gray's 'Anatomy,' a pair of good eyes, and a good head behind them, will be capable of yielding the student a kind of practical acquaintance with the process of tooth formations, far superior to the vague and dim conceptions derived from merely reading about these things in a book.

If dentists studied more carefully these processes they would better understand how to manage cases of teething. They would manipulate with more care not to disturb the germs under the milk teeth. They would understand better how to regulate unevenly developed teeth. They would acquire sharper conceptions of how the mineral constituents of the teeth are carried to their destination by the blood, and deposited in the cell-matrix into dentine by the

odontoblasts on into the enamel by the enamel membrane. They would the better appreciate the importance of preserving the highest degree of health of the mother during gestation, and of both mother and child during lactation, and of the child in particular during the earlier years while the teeth are in their formative stages.—*Dental Register*.

Paper on Celluloid.*

By Dr. R. FINLEY HUNT, of Washington, D. C.

In this, our progressive age, the versatility of the human mind and the capabilities of human ingenuity furnish us day by day with food for wonder and admiration, and in this respect our profession is keeping even pace with the rest of the world.

In the olden time, when our ancestors lived in a simple and primitive manner, their wants were few. They plodded on in their sober way of life, satisfied with little more than was needed for the mere requirements of a plain existence. How and why so large a portion of the human race emerged from this state it would be hard now to tell. What were the exciting causes that first aroused them from this mode of life, and have continued their influences to this day, is at present but a matter of conjecture. If the task should ever be undertaken of searching out these causes, and tracing the progress of the change from the simple and contented life of former days, through all its gradations, to the restless, unsatisfied, ever-advancing condition of the present time, it will most probably be found that they, like all other changes, have taken place in obedience to fixed natural laws, which always act with unerring certainty whenever the conditions for their operation exist. Their action is seen equally in the result of their violation as of their observance. Their operations for good or evil are felt in all the departments, all the circumstances of life. They govern all things.

To them the profession which we are here to-day to represent is indebted for its existence; to them it is also indebted for all the improvements that have been made and

* Read before the American Dental Convention at Long Branch, August 12, 1875.

the good results that have been produced in its peculiar domain.

The violation of these laws by the human race, and particularly by civilised nations, has always been followed by corresponding penalties—among these, defective dentition, decayed teeth, and, speaking generally, diseases of the oral organs. These same natural laws always impel the human mind to seek a remedy for evils and an expedient for difficulties. But the human mind does not always find at first (and sometimes it never does) the right remedy or the proper expedient. Thus in earlier times, when teeth ached, ingenious men (for that day) extracted them, and there the immediate trouble ended. Then our profession was in its embryonic state : *it knew no wants* ; its *needs* were supplied at the crude dictation of nature, as understood by man. Its birth dates from the time that men began to inquire into the cause and seek the remedy for this destructive process, ending in pain and loss. It is yet in its green youth, and will only reach its maturity when its devotees are able, not only to say that decayed teeth can be restored to their inherent physical condition, that aching teeth can be preserved for a time, and that lost natural teeth can be replaced artistically by artificial ones, but also to define precisely the means by which those who will adopt them can prevent, partially in themselves and more fully in their descendants, decay of the teeth and diseases of the mouth. This is the standard at which we should aim ; this is the goal that we should endeavour to reach.

Until that time arrives, and in all probability even afterwards, we must continue to do as we have been doing, to apply what must at best be called a lame and limited treatment of the ills that are brought to us to cure. We must still go on working at the wrong end of the trouble, and use our best efforts to preserve strong and well structured teeth, to prolong to the utmost limit the lives of the weak and poorly organised ones, and, when the possibilities of our present skill are exhausted, to replace the natural teeth lost with artificial ones in the most artistic and comfortable manner in our power.

With this last and important portion of the offices of our profession I have to deal specially on this occasion, as our President has assigned to me the duty of preparing for your consideration a paper on celluloid, a comparatively new

material, and one that is rapidly and deservedly growing into favour.

In the paper on that material, I propose to speak of its fitness as an appliance in the substitution of artificial teeth for lost natural ones, and in remedying congenital or incidental abnormal conditions of the mouth, as compared with other substances hitherto and at present used for these purposes; of its behaviour under manipulation and in use; of its chemical constitution as governing that behaviour; and of the processes, means, and appliances used for bringing it into the forms and conditions required for our purposes.

Of course, at the foundation of all these points lies the chemical composition of celluloid. It is therefore proper that we should first consider what celluloid is, and what are its component parts or elements. As its name (most judiciously chosen) implies, it is a form or condition of cellulose or celluline. These terms are used in the same sense by different writers on chemistry, and, so used, designate that solid, insoluble substance which is found, in greater or less proportion, in connection with lignin and with albuminous and other matter throughout the vegetable kingdom, and forms the walls of the cells of woods and vegetables.

For the purposes of our profession those fibrous vegetables have been taken which contain the greatest proportion of cellulose. Cotton was used at first, but hemp was found to be better, and is now alone used.

The precise process used by the Celluloid Manufacturing Company to convert hemp into celluloid, is not known to your essayist, but it will be sufficient at this time to give the general treatment and properties of substances applied in effecting this conversion.

The first step to be taken is to separate the cellulose from its associated substances as found in nature. This is an operation of more or less trouble, as the cellulose is more or less associated with other substances. In the case of cotton, it is very simple, as that fibre is composed almost entirely of cellulose of a certain quality. With hemp it is less simple; but with it the process is substantially the same as is required for its conversion into pulp for the manufacture of paper. The cellulose having been segregated from its associated substances, is subjected to treatment with nitric acid, by which it is converted into nitro-cellulose. Great

care is required in this process to produce the proper and best results, as there are three grades or chemical combinations of nitrogen (or its peroxide) with cellulose, viz.: mononitrocellulose, dinitrocellulose, and trinitrocellulose. The first and third of these are insoluble in ether and alcohol, and the latter possesses the property of being highly explosive. The second is called by some chemists, pyroxyline. It is soluble in ether, or ether and alcohol, and in that condition of solution is known as collodion. It may be remarked here that the terms pyroxyline, collodion, and xyloidine have not yet received the strict chemical definition that is required by pure or exact science.

The dinitrocellulose or pyroxyline is the chemical compound that is used for the production of celluloid by the addition to it of gum camphor, both being in a finely divided state, and first mixed mechanically. Thus mixed they are subjected to heat and pressure, when a chemical combination seems to take place, resulting in a homogeneous mass. This process is, I believe, called technically by the manufacturers, "conversion."

It is well here to speak of the nature of camphor and its action in this and subsequent manipulations. In the combination above spoken of, the camphor has the peculiar property of softening the pyroxyline and rendering it plastic. At ordinary temperatures, however, this property is almost entirely dormant; the application of heat is necessary to excite it to activity. It is, therefore, in a state of gum, a softener of pyroxyline, and not a solvent, as has been incorrectly stated by many, the writer of this included. But gum camphor is volatile, evaporating slowly at ordinary and more rapidly at higher temperatures. Therefore, camphor when exposed to the air or in contact with or inclosed by previous substances, is constantly evaporating more or less rapidly, according to the temperature. This evaporation of camphor proceeds even in its most intimate combination with pyroxyline, and, by the continued application of heat, can be so effectually expelled that no appreciable quantity remains, and the celluloid is thus separated into its former constituents, pyroxyline and camphor. It is not, however, either necessary or advisable to proceed so far in the final preparation of dental plates. It is not necessary, because a certain small portion of camphor left in the plate is not injurious, and it is not desirable, because there

is a risk of rendering the material brittle in the effort to expel all the camphor.

Pyroxyline possesses the property of elasticity to a considerable degree, but very little of plasticity. Hence, if it is changed by pressure from one shape to another, it has, on the removal of the pressure, a tendency, from its elastic nature, to creep back to its former shape. Its combination with camphor takes away from it the property of elasticity, and in return gives it that of plasticity, in proportion to the quantity of camphor added. As stated above, the camphor can in turn be driven off by evaporation, thereby re-exchanging plasticity for elasticity. It is absolutely necessary to do this after the plate is moulded, and before removing the pressure, and it is called "seasoning," on account of its analogy to the process of seasoning wood, by driving off the natural juices.

This material, celluloid, almost devoid of elasticity, can be rendered sufficiently plastic by heat to be moulded by pressure into any form or shape we may desire, and while under pressure it can be rendered sufficiently elastic to prevent any subsequent change of shape, under ordinary circumstances of use.

From what has been said, its behaviour under manipulation, up to the time that the moulding has been completed, may be readily inferred. One important feature—and it should be borne in mind at all times—is that, though quite strong and tough, it has a delicate texture, a disposition, if we may use that term, that requires gentle treatment and coaxing, rather than rude force.

We come now to the processes, means, and appliances used for bringing it into the forms and conditions required for our purposes. It comes into our hands in the form of blanks, for full and partial plates. The variety of the shapes and configuration of these blanks is necessarily limited, for it would be impossible to make blanks that would meet all cases presented; therefore they are given to us in such general forms that we can prepare them by cutting, if necessary, to suit each case.

Should a case require a greater amount of celluloid than is to be found in a blank, the latter can be pieced out, using a piece or pieces of the same colour. The surfaces intended to come in contact should be painted freely with a solution of celluloid in spirits of camphor. When properly done,

the union of the surfaces is perfect. The same plan can be used for repairs.

As it is necessary to heat these blanks to render them sufficiently plastic for moulding, the processes used for heating command the first attention. These may be enumerated as follows: oil, hot water, steam, glycerine, and dry heat processes. All these processes have for their common object the application of heat to the celluloid. They only differ in the mode of such application and the degree of results produced. The oil, steam, hot water, and glycerine were intended as baths for the celluloid, to avoid the danger of combustion or explosion of so inflammable a substance as nitro-cellulose of any grade was supposed to be. Afterwards the dry heat process was introduced, and shown to be as free from danger of explosion or combustion, if properly conducted, as any of the others, with the exception of hot water, and perhaps of steam.

Without entering into the particular merits of each of these processes, their general efficiency will be noticed with reference to the special ends to be attained or conditions secured in a dental plate or other appliance made of celluloid. These conditions are, that the plate or appliance must fit the mouth, must be free from liability to change of shape, and must possess the best degree of strength, elasticity, and hardness of which the material is susceptible. The first of these conditions can be secured by any of the named processes except that of hot water—the possible temperature of this in an open vessel being limited to 212° , while the others can be brought to 400° - 600° . The other two conditions are inseparable in celluloid, and can only be secured by the evaporation of the camphor, which has performed its duty of rendering the material plastic. It is very evident that this evaporation will not take place so rapidly or effectually in a bath of oil, hot water, glycerine, or steam, as when heat is applied without their intervention. In the use of any of these processes, these combined conditions must be considered as indispensable.

The preparation of cases for moulding is so well known that I will only suggest that care be taken to use plaster that will set hard (Red Beach seems to be the most reliable); that the faces of the mould be freely rubbed with powdered soapstone, by means of chamois skin or other soft material (this prevents the base plate and celluloid from

adhering to the cast); and that the modelling composition prepared for taking impressions makes a most excellent base plate. It can be prepared with warm water, a pane of glass for a bed, and a bottle for a roller.

Having the flask all prepared, the operation of moulding is to be carried on, keeping in view three essential points. 1st. To complete the moulding before too much camphor is driven off. 2nd. While doing this, to shape and point the celluloid while hot and soft, so that it will go wherever desired. 3rd. After the moulding is completed, to keep the plate under pressure and exposed to heat till its plasticity is exchanged for a sufficient degree of elasticity. This being done, it is allowed to cool thoroughly before removing from the flask. It is then ready for finishing.

We are again on ground so familiar to the profession that I will only mention some of the means and devices that have been of great service to me in the finishing process. After the plate has been "roughed off" with the knife, scraper, file, or other tool, I prefer to use only wheels, cones, and points made of felt or cork covered with felt or cloth of different degrees of fineness. I take champagne corks, on account of their fine quality, and boil them in water until they resume their original cylindrical form. The cork is then chucked in the lathe and turned down to any shape with sand paper, using first the coarser and then the finer grades. The sand paper is held on the surface of a stick, one end of which rests upon the lathe, in order to give it steadiness and turn the cork true. The turning may also be done with sharp files. A cover of felt or cloth made to fit the cork neatly is tied on by means of a light groove turned for that purpose near the chuck end of the cork.

For rapid cutting, powdered pumice, emery, or corundum is used, mixed with molasses. Care must be taken not to use the molasses too stiff, as it will then gum up the surface of the plate. A trial of molasses in this way will prove its advantages, for, like oil, it holds the cutting or polishing powder to its work, but, unlike oil, the plate can be perfectly cleaned by a few strokes of a brush in water. For polishing, rouge, rotten-stone, or whiting is used, first mixed with molasses, and finally dry. From the time that the use of the cutting powder is commenced to the final polish, the pressure of the plate on the wheel should be lessened at each step, until at the end it amounts to a light and delicate touch.

Thus finished, we have a dental plate or other appliance which, to the senses of sight and touch, presents a closer resemblance to the natural tissues than any other substance that has ever been used for these purposes. It is less harsh than any metallic plate, and even than vulcanite, being of a finer texture, and, as compared with that material, it is stronger, tougher, and more elastic, besides being free from the charge of affecting injuriously the mucous membranes of the mouth.

In presenting these remarks to you, it has been assumed, or, rather, not denied, that the celluloid is placed in our hands prepared in the best manner possible to meet our wants and requirements; but this is not by any means the case. It is true that great improvements have been made, and it is now far better than it was two years ago. But there are still important and even necessary improvements to be made. To one who has studied this matter as closely as I have, the imperfections and defects are patent and the remedies are plain.

Let us hope that, in the future, our just claims and requirements will be more regarded, and that these defects and imperfections, as well as other causes of complaint, will be remedied in the preparation and supply of celluloid for the purposes and use of our profession.—*Pennsylvania Journal of Dental Science.*

Meeting of Dentists at Manchester.

A Meeting of Dentists was held at the Clarence Hotel, Spring-gardens, Manchester, on Saturday evening, May 6th, for the purpose of considering a resolution in favour of throwing open the L.D.S. examination to all existing practitioners. There was a large attendance of practitioners from Manchester and surrounding districts, as well as representatives from London and Liverpool.

Dr. D. A. WORMALD (Hon. Sec.) opened the proceedings by saying that he thought all present were aware of the purpose for which they had met that day. He might say, also, as Secretary for the time being, in connection with the promotion of the meeting, that they were all aware the Dental Reform Committee had been formed; and it was thought by many of those in that district who were present at the previous meeting, and others with whom he had had correspondence, that the proper time had come for them to make a recommendation to the Dental Reform Committee. Consequently the resolution had been framed in the spirit in which they saw it on the circular, and they were called together that day to discuss and act on it immediately, as

the Committee would meet soon to carry out the question of Dental reform. It was not necessary for him to say anything further at present, except that the business of the meeting would be proceeded with by the election of Chairman. Their friend, Mr. Hayman, of Bristol, would propose a Chairman.

MR. HAYMAN : I have very much pleasure in proposing Mr. Harrison, of Sheffield, as Chairman.

This was seconded by Mr. HOPKINSON, of Manchester, and carried with acclamation.

MR. HARRISON took the Chair amid applause. He said : Gentlemen, perhaps it would have been as well if some other gentleman had been nominated in my place, but that has not been done, and I now take this position at your will and pleasure. I shall ask you to speak pertinently to the point, and not to wander from the subject of this resolution. I do not know who has arranged this resolution.

DR. WORMALD.—The promoters of the meeting.

THE CHAIRMAN.—I will read the resolution :

“That with a view to unite the Profession and facilitate the obtaining of Parliamentary recognition, upon the basis suggested at the Manchester Meeting, in August last, this Meeting respectfully recommends the Executive Committee to embody in their scheme of Dental reform a re-opening of the L.D.S. Examination to all existing Practitioners, without curriculum, and with a form of Examination modified according to the number of years Candidates may have been in practice.”

That is the resolution, and before asking anybody to support it I may venture to say I have taken very great interest in this Reform movement. I noticed many years ago the position Mr. Fox took in London (cheers) in a paper he read before the Odontological Society, and I noticed also the support which he received. I take it, as the Executive Committee is now formed, it is our duty as Englishmen and gentlemen professing to wish to make our profession a respectable one, both for ourselves and the public (hear, hear), to support the Committee as far as we can. If the gentlemen who have propounded the resolution will speak to it, we can then listen to any objections others may have to make.

DR. WORMALD said he had pleasure in moving the resolution which had just been read by the Chairman. He ought to have said first of all, in connection with this matter, that the letters which had been addressed to him and others, received that morning at the Clarence Hotel, were very numerous. They came from gentlemen holding the highest qualifications down to the humblest of their brethren, and only some eight or nine were not in favour of the movement. He, for one, was taking his part in this movement because he felt interested in all matters concerning Dental practice and Dental reform. In this matter he did not wish to say anything, and he was sure no gentleman present desired to do anything, which was likely to be schismatic or opposed to the good feeling, the harmony, and general good of the whole profession (hear, hear). Although the Dental Reform Committee had been formed for the purpose, and had as its corner-stone the compulsory registration and education of all Dentists, yet that was not the whole of its labours ; and he thought it competent for that committee to do whatever it could if it answered the purpose of Dental reform, and

would help to raise the status of the profession. Looking at it in that light, he thought it was perfectly legitimate for a meeting like that to support a resolution such as had been read. It seemed to him that it would do a great deal for Dentists, educated and talented men, who had worked up a practice, and be an inducement for them to enter the College gates if they were properly opened for them. The L.D.S. licentiates of the country, in comparison to the number of Dentists, were a very small proportion; and if the corner-stone of Dental reform was to be laid in compulsory registration and education, and if they would only adopt a scheme in a way that would be an inducement for the older and more respectable practitioners to come into the ranks, according to the number of years they had been in practice, his own impression was that this measure of liberality and justice would be such as to strengthen the ranks, and tend to make every man feel that his duty in the future was to give the best possible education to his children. He did think that men who had, by dint of hard work and perseverance, raised themselves in the respect of their fellow-men and the goodwill of the medical profession of the town in which they practised were worthy of some consideration in such a movement as that (hear, hear). To him it was only likely that all the respectable practitioners would try and pass, even if they had a modified examination according to the number of years they had been in practice. Those practitioners who were young in years like himself would, as a matter of course, be compelled to pass a more severe examination as a protection to those young men who now studied and had to pass their curriculum. He did consider that men outside the L.D.S. diploma had had anything but fair play shown to them in one matter, that of advertising. He knew this was a sore point, and one which tickled them very much. As a matter of course, there was no gentleman present, whatever might have been his practice in the past, but must feel that Dentistry must become allied with the medical profession in that respect. Every man should cease to conduct himself in anything but a professional manner. To do that, they must not advertise; but the disqualification put against advertising by the London people was a prohibitory law against a vast number of really respectable men. He would tell them why. He knew it was impossible for many practitioners outside London to be guided exactly by the same rules as those in large cities. For this reason Dentists, and many of them good men, had to visit other towns than the one in which they resided. Although he did not agree with the principle of advertising at all, yet it seemed to him there was a vast difference between a practitioner who visits a town twenty miles away and says "Mr. So-and-so may be consulted professionally at a certain hour of a certain day," and the man who puts a whole column advertisement of patents, prices, and improved systems in the newspaper. The Dental Board puts both men on the same level, yet this board is supposed to deal out even-handed justice, and when an individual gets his diploma he was allowed to do this either to a large or small extent without let or hindrance. He did not consider that either fair or just. It seemed to him preposterous in the extreme, although he wished to speak as mildly as possible, that the Dental Board of Examiners should allow their own licentiates (and he had got an advertisement with him in proof of this in which Mr. So-and-so, licentiate, says he succeeds to his father's premises where he will conduct the practice, &c.), to do this and yet object

to the man who merely puts his name in the paper the same as the man who has a whole sheet of advertisements. Every candidate should be willing to sign an obligation that if he advertised, his name should be struck off the L.D.S. list, and some principle should be adopted whereby licentiates could protect themselves, and that those who had diplomas should not be allowed to do that which other men were prevented from doing (hear, hear). He was afraid he was taking up too much of their time. He would merely add a few words in conclusion. There were several members of the executive of the Dental Reform Committee present; and although he had taken upon himself a responsible position (and he could assure them it was no light one during the past few weeks), in connection with that meeting, his only desire was that this resolution should be brought before them and talked over in perfect friendship with a view to benefit the profession generally. He had no wish that there should be anything to cause schism; he did not wish it to be looked at that there should be some men so high in the profession that they could not associate with the more lowly followers; but that even the humblest members of the profession should have the means of gaining a livelihood. He had no desire to cause disagreement in any way. He wanted the London men to lead them in this matter, and if they could see their way to support a resolution in the form proposed or even in a modified form to do so, and thus take in the great mass of men in the country at present outside the pale of the L.D.S. qualification. In a movement of this kind, when the Dental profession is on the threshold of a great future, they should be liberal and charitable to one another. If they could only bring in more and consolidate them it would tend to the good of the whole. For this reason he had a desire that the London men, who by association and numbers, by their institutions and their wealth, and all other advantages they could make use of, should see it to be to their own interest to do whatever they could to enlarge and widen their sympathy, and this would have a tendency to make the profession work together more harmoniously in the future. He was satisfied that when the time came, whatever differences of opinion they might have, they would be perfectly willing to give up their crotchets and go in for the common good. If they agreed to do this the profession would rise from the degradation some thought it to be in now to a higher pinnacle, and it would enable a greater number of clever and talented men in the future to come into their ranks, all working to raise and dignify a noble calling (loud cheers).

Dr. WAITE (of Liverpool) said he must ask them to bear with him that evening, as he was by no means in speaking trim. He would like, in the first instance, to endorse everything said by his good friend Dr. Wormald in relation to the desire of those promoting the resolution to work on perfectly good terms and friendship with all representatives of the profession. It seemed to him the resolution was one which ought to excite the sympathy and receive the support of every one who desired the advancement of the profession. It would be a waste of time to attempt to show the need there was for uniting the profession in one compact body. They had been considerably disunited in the past, and considerably disunited in the present, and they would remain disunited unless the causes of the disunion were entirely removed. And it appeared to him that foremost amongst these causes stands the fact

that a large proportion of practitioners have hitherto been excluded from the only Dental qualification the country offered. In treating a disease, one half the difficulty lies in diagnosing its true cause. That resolution would serve the committee with a true diagnosis of their patient's case, and he trusted they would take ample and prompt measures in treating the same (hear, hear, and laughter.) Union was not all they wanted. They had called a representative body into existence for a given purpose, and that purpose could only ultimately be accomplished by an Act of Parliament. It seemed to him that at the outset of their proceedings the committee would do well to lay their scheme and arrange their plans, so that when they go to Parliament they might go with one distinct object in view, having one solid front to present, and one strong united voice with which to urge it on the attention of the Government. For of all sure things in this world, nothing is more certain than that if there is division or disunion or disaffection in their ranks, Parliament would not legislate till that disunion was removed. It was therefore to unite the profession in order to facilitate the obtaining of Parliamentary recognition that they proposed the resolution to the committee. Now he had thus briefly referred to the preamble, he would ask them to allow him to say a word or two on the resolution proper. They would observe that it was put in the form of a recommendation. He should very much deplore any misunderstanding on that point either amongst themselves or on the part of the committee. Let it be understood they had no desire to dictate, still less to seek to coerce or menace the committee in any way. On the contrary, they wished to work with them for the good of the whole body, believing that such co-operation would most benefit the common end. They asked for a re-opening of the L.D.S. examination to all existing practitioners. He presumed it was meant all practitioners who would consent to conduct their practice in the future according to the laws laid down by the Odontological and Odonto-Chirurgical Societies. Nominally that was done between 1859 and 1863, and again in July, 1874; but practically the examination has never been open to the whole profession, and this in his view was what had created a feeling of dissatisfaction and a sense of injustice in the minds of many of their brethren. He could say a good deal on this topic, but he saw around him some whose experience furnished confirmation of what he had stated. Again, as to the terms on which they asked for a re-opening of the examinations. They did not want anything unreasonable. They asked for no favour. What they sought was simply to put right what was felt to be wrong, a re-doing now of that which was imperfectly done before. The principle for which they now contended had already been conceded in theory by the so-called re-opening in July, 1874. All that was wanted now was only a liberal and practical application of that principle. Their recommendation was that all now practising dentistry should have the opportunity, if they wished, to obtain the Dental diploma. In order to this two things were necessary: first, that they should not be required to go through the curriculum; and, secondly, that there should be only a modified examination. The plan most in favour with those with whom he had conversed was this: those in practice before 1859, and those who commenced before 1863, should be expected to pass such an examination as was required of the gentlemen who during those four years obtained the diploma, viz., a merely formal test; that

those who commenced practice soon after 1863 should have a more stringent examination; and that the character of the examination should increase in severity according as the candidate had more recently commenced practice, till in the case of a gentleman who had commenced in 1874, the same questions should be put as to the students per curriculum. He would suggest that the examinations for existing practitioners should always be of a *purely practical nature*. If he had rightly interpreted the genius of the resolution, he thought it was as fair a proposal as could be made. So much for the resolution. He had already stated that there was a large number of respectable practitioners excluded from getting the diploma. That statement he knew was likely to be disputed in certain quarters. But he wished to show them that it is true. Between 1859 and 1863 a number of practitioners were refused examination on account of having at some previous time advertised. Discouraged thus, many gave up all thoughts of a diploma, and took no pains to study or prepare for any future opportunity. But since 1874 they have re-opened the gates, as it is called; and he begged them to observe the conditions on which it was done. As he understood it, the only candidates eligible for examination without curriculum were those very gentlemen who were in practice before 1859, and they were required to pass precisely the same examination as that set before students fresh from their studies. It seemed, therefore, to him a misnomer to call this a re-opening of the gates; it amounted to nothing short of the permanent exclusion of a number of skilful and well-established practitioners. He would put it to them whether it was reasonable to expect a man, eighteen years in practice, to pass the same examination as a student with all the splendid opportunities of acquiring knowledge afforded in the present day? (Cheers.) Would the gentlemen who obtained the diploma between 1859 and 1863 like to stand the examination of to-day? He submitted that the recent re-opening does not meet the necessities of the case, and, therefore, he asked them to support the resolution which recommends the Executive Committee "to embody in their scheme of Dental reform a re-opening of the L.D.S. examination to all existing practitioners, without curriculum, and with a form of examination modified according to the number of years candidates may have been in practice. In conclusion, he would like to anticipate one or two objections which may be urged against the proposition. First, they might be asked to name a precedent. That could be done, and from a quarter which their London friends would scarcely like to object to. The Royal College of Physicians was originally a very close body; its membership was guarded with very great jealousy. In 1859 it was agreed that for one year any physician practising as such in the United Kingdom should be admitted as a member on furnishing certificates of character and practice, *without any examination* at all. He had been told that since that date the College had abundantly prospered. One might also quote the Apothecaries' Act of 1815, which provided for the full recognition of all existing practitioners. The College of Physicians at Edinburgh had also a modified examination of existing practitioners. Another objection was hinted at under the name of injustice to the present holders of the diploma. He might repeat the remark he made at the outset that he had no feeling of displeasure to those who held

a diploma, but when they discussed a question of that sort one had to speak in general terms. In Great Britain there were over 2,000 persons practising Dentistry; from these, 500 might be subtracted on account of combining other pursuits with that of Dentistry and using quack announcements. That left 1,500 Dentists. Out of these, 240 obtained the diploma between 1859 and 1863 upon notoriously easy terms, and have enjoyed almost a monopoly of it for the past fifteen or sixteen years. Let him ask them whether the remaining 1,260 practitioners, who were practically excluded by the terms imposed, had not a far stronger cause of complaint than the 240 could pretend to? (hear, hear, and cheers.) There could be no injustice to those gentlemen by admitting their compeers on the same terms as themselves. That was all they asked for. A still further objection had been put forth on behalf of those who, at the expense of considerable time, money, and labour, had passed through the curriculum, and honourably earned the diploma. But they must be good enough to consider that 1,260 were excluded, and that from 1863 up till the time the last list was issued only about 110 students had passed the examination. He admitted that at first sight it did seem hard that others should be raised to the position that those 110 had worked for; but no reform could be carried out without treading on somebody's corns, and their desire was to inflict the smallest evil on the smallest number of people. On this principle he contended that for ever to exclude 1,260 practitioners was a monstrously greater injustice than would be inflicted on the 110 by a liberal re-opening of the gates. The vastly higher position to which the diploma would be exalted before the public, if it were made the distinctive qualification of every respectable Dentist, would speedily compensate for any imaginary depreciation. They appealed to the Executive to adopt at once an enlightened and liberal policy of Dental reform. They did this believing that where apparently diverse interests were involved *the greatest good to the greatest number* was the only safe rule of action. They did this believing that the interests of the public no less than of the profession would be largely promoted by a clearer definition between respectable practitioners and quacks. They did this believing that disunion would be banished from amongst them, and that they would be drawn into closer fellowship in the provinces and in large cities; and believing that the Dental diploma which at present was far too much like the old membership of the College of Physicians would be elevated to a broader platform before the public, and so its value would be augmented, and that thus, ere long, the title of L.D.S. would become the recognised qualification of every legitimate Dentist. There was before the committee a golden opportunity. In Dental politics, no less than in the affairs of men, there is a tide which taken at the flood leads on to fortune. He laid claim to no unusual sagacity, but he doubted very much if an occasion would arise more favourable than the present for carrying into effect the spirit of the resolution he had the honour to second (applause).

Mr. HARGREAVES supported the resolution. He remembered writing to the college about the L.D.S. and could get no answer at all, although he was in practice before 1859. He always thought it a grievance that Dentists in full practice for twenty years had never had the pleasure

and honour of having the L.D.S. He could not understand how an institution could be formed by a few for the exclusion of the many.

Mr. W. MARGETSON (of Dewsbury) craved their indulgence whilst he said a few words on the subject. After the eloquent speeches they had just heard, he rose with great hesitation to endeavour to point out what he thought was another light in which they ought to view this important question. It will be well remembered that at the meeting held there in August last the first and principal resolution proposed by his friend Mr. Dennaut, and seconded by Dr. David Wormald, was in these words:—"That it is desirable that a committee be formed to see what steps can be taken to arrest the continual influx into the profession of illegitimate practitioners by the adoption of the principles of registration and compulsory education." At the meeting in London last March, when the executive committee was formed—drafted out of the general committee—this resolution was put prominently before the meeting, and the feeling on the part of those present seemed to be that this was the great object to be kept in view. To quote the words of Mr. Underwood:—"It was thought that the committee should decide what steps to take to effect this object; whether the matter should extend further was to be seen as time rolled on; but the real object of the committee was to take that subject and that alone into consideration." If they would look at a list of the executive committee he thought they would all agree that it was a representative one. In it were Fellows of the Royal Society, Fellows and members of the Royal College of Surgeons, licentiates of Dental surgery, doctors of medicine, doctors of Dental surgery, members of the Odontological Society; and also gentlemen, most respectable, worthy, and influential practitioners, who were not connected with any Dental or medical institution. They might call this a truly representative body, every member of which was fully alive to the importance of the work, and wishful to do his utmost for every class of his professional brethren (hear, hear). His object in rising was to earnestly entreat them not to do anything that day that might by any possibility add to their difficulties. The committee had a great work before them, and it would be most unfortunate if by any act of theirs they were to show any want of confidence in them; rather let them be left in their first deliberations undisturbed by any suggestion from without. Depend upon it, Dental reform is a very comprehensive term, and if they worked quietly and carefully, doing one thing at a time and doing it well, they would ultimately accomplish much more than they were likely to do by attempting too much at once. Let them remember the words of their good and constant friend, Mr. Fox, a true friend of Dental reform (hear, hear), and who had been earnestly working for that object since 1870. He says, speaking of the provincial practitioners, "They have commenced the work handsomely, let them proceed with it generously; we do not mean in pocket, but in a generous and forbearing spirit; we need and we claim the aid, not only of activity, but of patience and reliance." With these few remarks he begged to move as an amendment—

"That it is not desirable or expedient to embarrass the Executive Council of the Dental Reform Committee with any suggestions at their first meeting, or until they have had time fully to discuss the subject in all its bearings.

Mr. TURNER (of London) suggested the word "discuss" instead of "study," and Mr. Margetson adopted the correction.

Mr. KXAN, in seconding the amendment, said he considered it premature to make any suggestions at present. As one of the Executive Committee, he had no doubt that they would be very happy to take into consideration the opinions of their friends when the proper time arrived.

Mr. TURNER, who was received with applause, said he rose with a considerable amount of diffidence and some degree of responsibility to make a few remarks on the resolution before the meeting, and also to advert to the amendment. In the first instance he ought to state that he had come there purposely to hear what could be said in reference to that resolution and to meet his brother practitioners. He had not come in any way officially. The task was entirely an individual one. He had been wandering about Manchester during the day, and had purposely avoided meeting his brother practitioners or calling upon them. He had met with one driving in his carriage to that meeting, and about five minutes' walk from the hotel. He got in the carriage, and that was the first professional gentleman he had spoken to in Manchester. Consequently he came there perfectly unbiassed and anxiously willing to hear all that could be said in reference to the resolution. There was one little matter he should like to point out in the preamble of the resolution, that is, that the expression "Parliamentary Protection" is used. Now, he made bold to state that it was utterly opposed to the spirit of English legislation to protect any body of men. All legislation was for the protection of the public (hear, hear), and not for any body of men. They might educate as they liked or take what curriculum they liked, but they would never get the protection of Parliament. If they would look at the preamble of the Pharmaceutical or the Medical Act, they would find it was in order that the public might be able to distinguish between this man and the other man that these Acts were passed, and not to protect this man or that. They all knew very well that medical men to-day were liable for any malpractice. Therefore, he begged of them in considering the work the executive council had before them in managing anything on behalf of Dentists, to dismiss from their minds anything which had the slightest idea of Parliamentary protection. No Act of Parliament could prevent him going to the blacksmith, or the barber, or the chemist round the corner and having a tooth taken out; but an Act of Parliament could give him or other men, under certain circumstances, a recognised legal position which would enable the public seeking their services, to distinguish between a qualified and an unqualified man. But it would not protect the public from going to an unqualified man, and leaving the qualified man on one side (hear, hear). So that any idea of Parliamentary protection must be put out of the question. All they could get—and he spoke from his own individual view of the question—was legal recognition as Surgeon Dentists, or Dentists, or any other name they might assume with the consent of Parliament, so that the public would be able to distinguish between a man who had this position and the man who offered his services without the position. If they took that view, he thought they would see that the action of the executive council in endeavouring to get such organisations, required no such resolution as this pressed upon them. Any recognition they could get

from Parliament would of necessity recognise all Dental practitioners. They might strive with the College of Surgeons as long as they liked—for it was not with the executive council they were striving but with the College of Surgeons—to get the L.D.S. from them on cheaper terms. They would find it to be the old story, and he said it without any idea of hurting any one's feelings, but merely to show clearly the view taken in his own mind; they had all heard of it before—"Give us of your oil, for our lamps are gone out." It is the old, old story, one man takes advantage of his opportunities; another does not. There were plenty of opportunities for men in certain positions going up to the College of Surgeons before 1859. He had heard it said, the examination was at that time modified. How modified? Was it reduced to meet the capacities of men who came up to the College of Surgeons? Was there a man in that room who would accept such a diploma? He hoped not for the sake of the profession. All that was wanted to pass an examination was some knowledge which could be found within the boards of books; and the longer they had been in practice, the easier it was to pass the examination. There were technicalities which might pass away from the minds of older men, but they made up for it by more experience. As to going before the College of Surgeons to be examined according to age, he could tell them it was not according to memory, but according to experience they were examined. But even as to the question of memory, would any one present say he could not get up a small amount of technical knowledge in six months' time? He was sure there was no man who wanted a diploma, but could go up and get it. Don't let them damage themselves by seeking to pass a minor examination. What was the value of thus passing an examination? As he said before, it was the old story, "Give us of your oil." They would lower the profession by seeking for such a thing, and lower any one following in their footsteps. He spoke in confidence when he said that few gentlemen who went to the College of Surgeons were sent back, for they were examined in practical matters and not in technicalities. He was very sorry indeed when the College of Surgeons threw open its doors again, that there should have arisen the difficulty about advertising. That professional crime of advertising had been the bugbear when they had endeavoured to band themselves together as one body. One man took one view, and another a different one. But he meant to say that as long as the word Dentist appeared in a newspaper they could not be looked up to as a profession. No one, he was sure, could take any objection when an announcement was required by the exigencies of provincial practice; but to use the name of Dentist was to use a name that did not belong to themselves, but to the whole medical profession. He had spoken his mind pretty freely with reference to the modified examination. It was all very well to talk about a modified examination, but how was the College to do it? Were they to ask a man what questions he would like to have proposed to him? How were they to invent a sliding scale? He took it that the longer a man was in practice the more easily would he answer the questions put to him. The College of Surgeons was a difficult body to move, and they, the Dentists, in London had the greatest difficulty in getting the L.D.S. from them; but how far had they the power to alter the curriculum? It cost them 800*l.* to get the Act of Parliament to give the L.D.S.

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under the conditions in which we had got it now, and he thought he might speak with safety in saying that they had not reimbursed themselves. A number of students had gone up and given ten guineas for their diploma ; but the Examining Board must have their fees. The fees did not go to the College, but to the Examiners. A very little portion of ten guineas went to the College of Surgeons. These little difficulties had to be met when they spoke of that College. He was speaking now in confidence, as a professional gentleman to professional gentlemen, and he should object to these remarks going abroad through the ordinary unprofessional press. But these were the difficulties to be encountered in London. They must not suppose there was any lethargy or want of desire to promote the welfare of the profession on the part of the men who had undertaken to do the work. But those who fought the battles knew the difficulties. He had not come to that meeting to beg of them either one thing or another. It was a matter of indifference to him how the resolution went. He had a duty to perform, and should work for the Executive Council as long as it existed. But he did not think, with all due regard to the energy and clear reasoning of the gentlemen who had spoken, that the resolution would do much good at present ; because they had to tackle the College of Surgeons, and that is a body not easily to be moved. It is a strong and rich body, and one which values its diploma. It has a world-wide reputation, and it was not likely to let down the stringency of the examination when asked to do so. It reserves that to itself. He asked those present to place themselves in the position of the examiners, and to say if a body of men asked for a modified examination whether they would say "Yes, we'll let you through easily." "No," they would say, "come and be examined;" and, as he had said, of those who were examined few would fail. When the College gates were opened in 1859, one condition stated that they should not have advertised after a certain date. At the recent opening of the College it made the date some fifteen or sixteen years. That was very absurd, and it was an error which was detected too late ; but he believed that error would be very soon remedied, and many men, whom he regretted ten thousand times over, had been prevented taking the L.D.S., these men would be able to go up and take the L.D.S. But he did not think, because this had given dissatisfaction in the profession, that the Dental Reform Committee should be visited with the mistake by having a resolution imposed upon them at the onset, before they had ever discussed the matter at all. They had called a meeting to the best of their judgment at the proper time for discussing the matter clearly ; and, it appeared to him, the course at present was to get Parliamentary recognition, and that Parliamentary recognition must take in all men in practice, whether L.D.S. or any other S.S. belonging to them (laughter and cheers). They must all be taken in, and then it would be for the profession to rise. Whether it could be done or not was another matter ; but they were much more likely to get something from Parliament than from the College of Surgeons. Now, he had spoken confidentially on this matter. If he had wanted to make a speech for the public it would have been of a different nature ; but meeting professional brethren in a room like that he could speak to them freely. He had hinted at the difficulties to be encountered, the impossibility of getting Parliamentary protection, and the almost impossibility to get, what it would be impolitic to get, the

College of Surgeons to reduce nominally the stringency of the examination. He said nominally; for when elderly gentlemen sat at a table and elderly gentlemen came to be examined, they knew how to behave themselves. He did not think that any of them would like to go up, if it came to the push, under the sliding scale. There was nothing in the examination but what all could do in six months' time. In conclusion, he might say he should not vote one way or the other, but as he saw there was a "honorary secretary pro. tem.," he should like to know what that meant.

Mr. SHILLINGLAW (Birkenhead) said he was somewhat astonished to receive the invitation to attend that meeting, more especially on the subject of the resolution before the meeting. When he was there last August the meeting then formed a committee with the object of seeking legislation on behalf of the Dental profession. He then saw that there were many difficulties in the way, and those difficulties still stood before him. They as a body could not really and truly go to Parliament for an Act to protect themselves. As their friend Mr. Turner had already said, Parliament protects the public, but will protect no body of men in particular. The chemists some years back went to Parliament, endeavouring to obtain a legal status for their profession in the eyes of the world, but they failed to obtain it. They tried three times, and at last were enabled to get in the thin end of the wedge in the matter of the sale of poisons, by restricting the sales to those legally qualified, or those who had passed a certain examination. In passing that Act it was seen that there must be a qualified body of men for the sale of these poisons, and this resulted ultimately in the Pharmacy Act. The chemists and druggists have now a position, but it is owing entirely to the Poisons' Act. They (the Dentists) had not got a Poisons' Act. A blacksmith might take a tooth out with his pincers and draw the patient round his smithy; undoubtedly he was liable by the present Act of Parliament for injuries committed, and so were they also liable for injuries to their patients arising out of their practice. He did not think it likely that Parliament would extend to them any protection in this matter, or extend to them the protection, so to speak, which the surgeon enjoys. It is necessary to the public, in the matter of medical protection, to have some person legally qualified and who has passed an examination, so that they might rely upon them in the treatment of any diseases they might suffer from. He was hoping that in the future they might obtain some position, not that of protecting themselves, but to some extent a position whereby they could stand before the world and show that they held a qualification to do that which they professed to do. Those were the views which he held with respect to the resolution before the meeting. He wondered at first why it should not emanate from the Reform Committee, but then the thought crossed his mind that it was to strengthen the hands of that committee. Seeing, as Dr. Waite had stated, there are many Dentists now in practice who would seek the L.D.S. qualification he thought at first that it was the opinion of the Reform Committee that by opening the doors of the College it would strengthen their hands. But he did not think it would do so; for if they attempted to mend a cracked pot, and by so doing made another crack in it, he did not see that it would really mend the matter. What they really wanted was to stop anybody going into the profession

without proper qualifications. First let them obtain the Act, and then other matters would be soon accomplished (cheers).

Dr. WORMALD.—I had better say, in regard to the last remark of our friend, Mr. Turner, that I hope he will not be troubled with the Secretary. The duties of Secretary *pro. tem.* will finish with this meeting, and I shall not be sorry.

Mr. SIDNEY WORMALD said : Before you put the resolution, Mr. Chairman, perhaps I may be allowed to say one word (cheers). Many of the gentlemen present, no doubt, know that I have taken an active part for some time in the Dental Reform movement, and as a member of the Executive Committee, I have felt rather diffident at the idea of presenting myself at this meeting. But as there are other members here present who have taken the liberty of making a few remarks, perhaps I may venture to do the same (hear, hear). I shall not enter into any remarks with regard to supporting or saying anything definite on the question, because it is a matter which will come before the Executive Committee. I can only say this, I shall give it my favourable consideration when that time comes, which is Monday week. I am very much obliged to Mr. Turner for coming down from London to the meeting, and for the remarks he has made. I am also obliged to Dr. Waite for his able speech. I quite endorse the sentiments and the facts he has uttered. It is a matter which really requires to be considered. Those gentlemen who possess the L.D.S., or the qualification that has been extended to them either by the curriculum or without, look at this matter in a very different light to those who do not possess it. There are very great difficulties in the way at the present time to those who do not possess the qualification. There are gentlemen in this room who have been as anxious, and have studied and read up well, for that examination, and have done all they possibly could do, and offered themselves as candidates and been refused. And I say most unjustly (hear, hear). I am one of those. And I say that for all such as myself, who feel themselves qualified by years of respectable practice, which speaks for itself, it is high time that we ask for some consideration, and if we cannot get that consideration, then it is time we did something for ourselves (hear, hear). I am in favour of the resolution.

The CHAIRMAN.—Our friend Mr. Turner, the Secretary of the Executive Committee, has in his observations cautioned us in such a grave manner that I am sure it behoves us to be very careful what steps we take. I said, in reply to Mr. Wormald's invitation to the meeting, that I was not quite sure whether this was the right step to take at the present moment or not. Certainly it would have to come to the front, but I question in my own mind whether just now is the proper time. Dr. Waite has made an impressive speech on the subject, such as must have considerable weight even with Mr. Turner. I am quite sure our presence here is to support the executive; not to trammel them with any resolution, but simply to give them our cordial and energetic support. First of all, I take it, we want compulsory registration; and I have contributed to the expense incurred under the idea that first of all they were to have compulsory registration for the protection of the public. If that is accomplished, together with compulsory education, I take it that all these other matters will come as

a matter of course (hear, hear). That being so, I shall proceed to put the amendment before you.

Fourteen voted in favour of the amendment, and nine for the original resolution.

After some remarks on the possibility of forming a Dentists' Club in Manchester, a vote of thanks was cordially given to the Chairman on the motion of Dr. Waite, seconded by Mr. Buckley, and responded to.

Odontological Society of Great Britain.

ORDINARY MONTHLY MEETING, JUNE 12TH, 1876.

CHARLES VASEY, Esq., President, in the Chair.

The PRESIDENT announced that Mr. Moon had presented the Library with two volumes of Mr. Bryant's "Practice of Surgery." He regretted to state that, owing to extreme pressure of business, Dr. Murie would be unable to be present to read his paper, but it would be read some time during the winter. He hoped the evening would be filled up by the hearing and discussion of casual communications.

Mr. WEISS called attention to a case of deposition of tartar on the buccal side of a block. In extent it was about $1\frac{1}{4}$ inch in length, and $\frac{5}{8}$ ths. of an inch in thickness. What made it somewhat interesting and remarkable was that there were clear indications on the ^{so} binding surface of the block that this side of the mouth had been freely used for mastication; and, what made it still further remarkable was that such a piece of foreign body in the mouth could cause disfigurement of the face, causing the cheek to be thrust out without the patient being aware of it. He also called attention to a new flask which he had constructed, which had been vulcanised over 1,400 times, and had been in constant use for seven years. It had a shaft and a rod on each side; and the upper part went down readily, steadily, and perfectly perpendicularly, which prevented the teeth being broken by the closing of the flask, as was the case in many other flasks, arising from the fact that the two halves did not go into the true position. He thought that the contrivance was a friend that could always be relied upon for doing its work.

Dr. SANGER said that the case mentioned by Mr. Weiss reminded him of one, many years ago, of a woman, 60 years

of age, who was subject to rheumatic gout, and who had concretions, considerably larger than those mentioned, all round the teeth of the lower jaw. He fancied that the rheumatic gout diathesis had something to do with the formation of the concretions. He also remembered seeing a formation of the same kind in the sub-lingual gland.

The PRESIDENT mentioned the case of a woman who had a large mass formed in her mouth, the same size and the same description which formed over the molar tooth, and she came to the hospital to have the *exostosis* treated.

Mr. TURNER, referring to the case mentioned by Mr. Weiss, said it was to him remarkable to see such an accumulation of tartar in the part of the mouth which had been freely used for mastication, and it showed how much might be done by gradually increased pressure. It was also strange to see how the tartar, which was deposited in a soft state, could make room for itself. The Society was much indebted to Mr. Weiss for calling attention to the flask which he had constructed, but he (Mr. Turner) thought that a flask which would enable the operator to hold the teeth and the model in the same position, before he commenced to pack in the rubber, would be most valuable, and that was the kind of flask that had been invented by Mr. Brunton, who had had before the profession for two years what is known as the Contour flask.

Mr. STOCKEN mentioned a case in which a concretion passed through the sub-lingual gland every third year. It was about half an inch in length and $\frac{3}{8}$ ths. of an inch in width.

Mr. LYONS said he had a case of a lady, 22 years of age, where the four front permanent incisors were loose, and the whole of the alveolus disappeared. There was nothing remarkable in the disease, except that it occurred at such an early age.

Mr. SEWILL thought that there might be some relation between the deposition of tartar and rheumatic gout diathesis, but it could hardly be that indicated by Dr. Sanger. He thought that gouty concretions of any kind were not analogous to salivary deposit. The tartar was more akin to the concretions of the bladder which fastened round a foreign body. So far as he knew, in the mouth there was no special concretion of tartar from the glands, and therefore it was not in any direct relation to those chalky stones

which were found in gout. Tartar, besides being made of earthy matter, contained foreign particles, such as epithelium scales, and other matter found in the mouth.

Mr. LYONS, in answer to the President, said that the teeth in the young lady he had referred to had been gradually loosening. The disease had been about three years in duration.

In answer to Mr. Turner, Mr. LYONS stated that teeth had to be removed because they were so very loose.

Mr. CANTON: Hearing that the paper for this evening was put off, and having two cases which have interested me, I have hurriedly put the notes down in order to bring them before you this evening, therefore if they are not as perfect as they might be perhaps you will kindly excuse it. The history of the first case is as follows—A young lady, at the age of 21, had a severe fall during an attack of scarlatina. One front tooth she distinctly states was loose before she had the fall, but four years after this two other front teeth had become so loose that the three were extracted and put on to a gold plate at the age of 25 years. Last July (six years since the upper front teeth were extracted) the four lower incisors had to be extracted on account of the extreme looseness, and also the right lower first molar, on account of the decay of the posterior fang apparently from pressure, caused by the second molar. This tooth was very loose as well. This brings the lady to the age of 31 years, and wearing three upper and five lower artificial teeth. I may mention that she is the daughter of a medical man and one of a very large family, that no other members suffer in the same way, and that her father can in no way account for it, as she has always been a very healthy person, and had no illness whatever besides the scarlatina mentioned. Her gums are, to all appearance, perfectly healthy but rapidly retreating from the teeth, the fangs of nearly every tooth are quite exposed, and all the teeth more or less loose. I saw this patient on the 17th of May when she came to me on account of the left upper first bicuspid having dropped out, and which I added to the plate she already wears. I have brought with me the four lower incisors which I will pass round. They are to all appearances perfectly healthy, and every other tooth is so also, except the molar extracted, which I think is accounted for by pressure. The second case, which is very similar, is as follows, and I will read it

as written for me by the patient:—"When first I noticed my teeth getting loose it was about the year 1870. Three years after that I went to a dentist who scraped them. I tried several things to fasten them but all to no purpose. My gums used to be very full and a dark red, also to swell sometimes. I was subject to gumboils. For years I noticed a thick matter on the teeth. About two years ago this discharge from the gums became more but not so thick; now it is all about my mouth in the morning; before, it was confined to the teeth only. I never had a serious illness in my life, and always have had good health with the exception of colds, headaches, and a very low nervous feeling; my age is 26, I cannot in any way account for my teeth becoming loose." I saw this patient for the first time on August 9th last year, and then extracted the two upper central and one lateral incisors, which were perfectly loose, and every other tooth in her head was in a similar condition to the first case—namely, her gums very much receded, roots all exposed, and teeth all more or less loose, especially one lower incisor. I saw no sign of any discharge from the gums, which appeared quite healthy. I could get no history of a fall or blow or illness, or, in fact, anything to account for the state of her mouth. I have the teeth extracted with me, and will pass them round. These two cases I have brought before this Society as I think there is a great similarity between them, and because I should very much like to hear the individual opinions of the members. They are the only two cases I have ever met with, or even heard of, in which the teeth have begun to loosen and drop out perfectly sound between the age of twenty and twenty-one. In the first case there is the history of a fall, which possibly may have given rise to the loosening; but I should have expected to find some discoloration in the teeth, which is generally the result of a blow or fall as well as the loosening; but this is not so in either of these cases: the teeth are of a perfectly good colour, and also after a blow or fall one would hardly expect every tooth in the head to loosen.

Mr. SEWILL mentioned a case he had watched for seven or eight years of complete absorption of the root of a permanent tooth. It became gradually looser until it was removed by the finger nail; but there was a history of injury which had occurred many years previously. He had several patients, young ladies, about the age mentioned by

Mr. Canton, under his care at present, and they were losing their teeth in the way that had been described, the alveolus being slowly absorbed. The teeth were sometimes so loose that they had to be removed. In some of these cases the general health might be suspected; but in most of them there was very little history to account for the local disease. The treatment he adopted was to make the best model he could, using liquid plaster of Paris, and making a vulcanite frame all round the mouth, and to protect the loose teeth from the bite and from change of temperature, the frame embracing accurately the necks of the teeth.

Mr. HUTCHINSON said that three months ago he had a case similar to the one related by Mr. Canton, in which, without any apparent cause, loosening of the whole of the teeth in the upper and lower jaws occurred. From experience he was quite convinced that, in a tooth the root of which suddenly became conical, loosening was much more likely to occur than when the roots were of the round shape.

Mr. OAKLEY COLES mentioned a case he had had of a girl twenty-three years of age, a worker in artificial wax flowers. Her gums were very much inflamed at the margins and the teeth were loose, and he thought very wide at the cutting edge. The tartar was of a dark colour, exceedingly hard, and passed at some distance from the neck of the tooth towards the alveolar cavity. He removed as much of the tartar as he possibly could, then scarified the gums afterwards, applying to them chlorate of potash ground up in glycerine. None of the teeth were lost, and the girl got better. He could not say whether the nature of her occupation had anything to do with the condition of the mouth. There was no history of syphilis, and the girl was strong in every respect.

Mr. HENRY, referring to the remarks of Mr. Sewill, thought that the glands themselves were great contributors to the amount of tartar deposit.

Mr. SEWILL said that what he wished to state was that the tartar was derived from the saliva as the saliva was derived from the glands.

Mr. C. S. TOMES exhibited some models sent by Dr. Moffat, of Edinburgh, which were interesting as showing how a very unpromising-looking mouth could be brought into a tolerably satisfactory form by the extraction of the

teeth, and by the patient learning to put a pretty constant pressure on one of the teeth with the finger. He also called attention to some peculiarities he had observed in the development and succession of the teeth and poison fangs of vipers.

The PRESIDENT called attention to a model of a cleft palate in which the incisor tooth was not only turned round but bent upwards to a horizontal position, sticking out in a very awkward and frightful-looking manner. Such cases were generally treated at a very early age, but the woman in this case was over thirty, and the hare-lip had not been operated on. The supernumerary tooth and the lateral incisor were on the other side of the gap from what it would have been if the gap depended upon non-union of the intermaxillary bone with the two maxillary bones. The division generally seemed to be between the lateral and central incisors.

Mr. SEWILL related a case of a young lady, fourteen years of age, whose teeth were some months ago broken into fragments by a blow from a stone. It was necessary to extract the front teeth, and as the mouth was badly adapted for artificial teeth he thought it better to close the gap in front by pressing the teeth together and pressing them in before asking the patient to wear artificial teeth. A plate was prepared and pressed in the teeth, and after wearing it for some time there was very little deformity in the front of the mouth. If the plate had been constantly worn there would have been greater improvement, but, as it was, he had no doubt that the teeth would continue to improve from the natural growth of the jaw.

Mr. OAKLEY COLES said the President's model of congenital cleft palate showed negatively the influence of the operation of hare-lip performed in early life as compared with the relative position of the jaws at an adult age. He had never before seen a model of the mouth of a patient thirty years of age in which there was anything approaching perfect articulation in the upper and lower teeth. In many cases it might be impossible to postpone to a late period the operation for hare-lip, but where it could be done it would be very desirable, as it would preserve the relative position of the upper and lower jaw much more perfectly than if the operation was done earlier in life, and would make a much

more symmetrical arch for operation or for the application of an artificial palate later on in life.

The PRESIDENT was afraid that deferring the operation of uniting the lips became so serious in the matter of articulation that very few in the present day would consent to its being deferred. The difficulty, too, in feeding a young child made it very desirable to have the lip united as early as possible.

After some questions put by Mr. Gaddes and Mr. Coleman had been answered by Mr. Tomes in reference to the communication he had made,

The meeting, which was the last of the session, was adjourned.

Notes from the Journals.

DENTAL ANÆSTHETICS AND "DENTAL SURGEONS."

QUESTIONS of the highest practical moment relating to the use of anæsthetics in dentistry and to the practice of unqualified dentists have been under discussion in our "Correspondence" columns. Dr. Burney Yeo, impressed by the condition of a patient who had been subjected to a prolonged dental operation under "the gas"—*i.e.*, nitrous oxide,—proposed certain urgent queries. He inquired whether the presence of strongly marked "physical signs of both aortic and mitral disease," or of valvular obstructions generally, ought not to be regarded as contra-indicating the use of anæsthetics, and if nitrous oxide could be held to form an exception to the rule of caution? Mr. Hamilton Cartwright, Mr. Braine, and Dr. George Johnson have replied, the former pointing out and the latter explaining with singular clearness the fact and causation of great danger attending the administration of nitrous oxide, particularly in cases of pulmonary obstruction or weakness of the right muscular wall of the heart. The passage in Dr. Johnson's letter, in which he exposes the fallacy of inferring strength from increased fullness and tension of the pulse in the first stage of anæsthesia by nitrous oxide, is of great value and interest. Mr. Braine, as an "anæsthetist," does not attach so much importance to the risk attending the use of anæsthetics. Possibly familiarity with danger breeds contempt. We must confess to feeling more sympathy with the caution of Mr. Cartwright and Dr. George Johnson than with the courage of Mr. Braine. Meanwhile, all our correspondents are agreed in respect to one point, and it is for this we are anxious to bespeak general attention. Nothing short of ignorance of the danger they incur or recklessness can induce unqualified persons to administer anæsthetics of any description, or patients to subject themselves to such perilous because unskilled treatment. It should not be forgotten that a dentist is unqualified, whatever his "experience" or manipulative ability may be, if he is not possessed of the knowledge requisite to diagnose or treat the symptoms of general disease. In a word, he is practically incompetent in all cases

in which tooth symptoms are dependent upon, or have originated in, a morbid condition of the body as a whole, or of the teeth themselves as organs which suffer in sympathy with the general system. No mere manual dexterity can possibly make amends for the lack of medical knowledge. The non-surgical dentist is, of course, wholly incompetent in a case requiring the use of an anæsthetic. He cannot know how to treat his patient; and so generally is this acknowledged that honest men call in the assistance of an expert to take medical charge of the case and administer the pain-relieving drug while they restrict themselves to performance of the operation. This is obviously a very disjointed and, as far as the public are concerned, most unsatisfactory mode of practice. A question may at any moment arise, either as to the extent of the manipulative process, the condition of the patient, or the administration of the anæsthetic, but no consultation is possible. The qualified surgeon cannot meet the unqualified dentist on grounds of professional equality. Setting all questions of propriety apart, the one does not possess the knowledge necessary to give the basis of any consultation. We think the practical issue raised by this consideration is of vital moment. To speak frankly, we do not hold that qualified medical or surgical practitioners are justified in playing the part of "anæsthetists" to dentists who are teeth extractors and teeth-makers, but nothing more. Would qualified anæsthetists back up the practice of bone-setters or chiropodists? The one true remedy for the existing state of matters in respect to dentistry is supplied by the "Association of Surgeons Practising Dental Surgery." The members of this Association are first surgeons and then dentists. They are qualified to treat any case of tooth disease all through. They can trace effects to their causes, they can administer remedies for both root and branch of the malady, and, whatever occurs in the course of the case, they are armed with the knowledge necessary to deal with it; besides which—a point of great importance to the patient—they are in a position to call in and consult with any practitioner whose aid may be desirable. The public will consider their own interests in confiding their cases to such hands, and by so doing secure safety, which cannot be obtained at the hands of men who are "dentists" and nothing more, even when backed up by the occasional assistance of professed "anæsthetists."—*Lancet*.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—May I call your attention to the mistake you have made in your issue for this month, namely, that the meeting held May 6th at Clarence Hotel, Manchester, was called by S. Wormald, Stockport. The meeting was called by Dr. Wormald, of Bury, as you will find from circular.

As a member of the Executive Council I took no part in the meeting.

I am, yours faithfully,

SIDNEY WORMALD.

Wellington-road South, Stockport, May 23rd, 1876.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—I felt very pleased to read in this week's *Lancet* the speedy protest from so highly a respectable class of members of our profession against the former article on "Dental Surgeons" in that paper.

Individually, as a "Dental Licentiate," I return them my best thanks, and am sure others will feel grateful, for the attitude taken in the welfare of the profession. "Time will alone prove" the success of the new society. The "Dental Licentiate" taught in "Anatomy," surgery, chemistry, &c., with some years acquirement of "Dental Mechanics," educates him in a speciality, and qualifies him to practise the art and science of "Dental Surgery," and which the "Public" will not fail to recognise and appreciate.

The administration of "anæsthetics" by unqualified persons is most reprehensible, and ought not to be permitted. I believe our body invariably call in the aid of some "Medical Friend" to administer the same, when required, leaving us quite enough to do in the removal of roots, &c.

The *Lancet* further states there has been a laxity on the part of the "Odontological" Society in admitting members, &c. To this I must take an exception; however, I should have been pleased if the "Council" had made a "move" in some way similar to the "Pharmaceutical Society," who now require "Registration."

Your obedient servant,

A. P. REBOUL.

60 Liverpool-road, Islington, N.,
London, June 3, 1876.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—Notwithstanding my having made ample explanation and reparation for the unfortunate inadvertence which brought Mr. Weiss to the front, he continues to call in question, both by indirect insinuation and direct assertion, the truth of my statements in regard to the matter at issue—statements which, in the absence of evidence of their falsity, he was bound, in common courtesy, to accept as final.

In his communication in your March issue he shows himself to be either deficient in ordinary perception or guilty of intentional misrepresentation. I have already made all the explanation necessary to a fair-minded man, and as Mr. Weiss has shown himself incapable of appreciating the courtesy due from one gentleman to another, his opinions are henceforth a matter of indifference to me.

The good opinion of your readers is not, however, so lightly esteemed by me; and if any of them care to investigate for themselves the truth or falsity of the allegations of Mr. Weiss, that the Review, about which so much has been

written, appeared in the *editorial* department of the *Dental Cosmos*, by turning to page 614 and following of the November number of that journal, or to the department of "Hints and Queries" in any other number, they will be enabled to decide the question at a glance.

I shall be satisfied to leave the matter to their judgment without further comments.

Yours truly,

J. W. WHITE.

The Profession of Dental Surgery.

TO THE EDITOR OF "THE LANCET."

SIR,—We, the undersigned qualified surgeons engaged in the practice of dental surgery, beg to emphatically protest against the inference conveyed by your editorial article, entitled, "Dental Anæsthetics and Dental Surgeons," in your issue of May 27th. In making the statement that "the one true remedy for the existing state of matters in respect to dentistry is supplied by the Association of Dental Surgeons practising Dental Surgery;" and further, that "the public will consider their own interests in confiding their cases to such hands, and by so doing secure safety," &c., the inference is conveyed that this new Association is a representative body, including within its ranks the larger and more influential section of fully-qualified surgeons who are engaged in the practice of this specialty. Leaving out of present consideration the injustice done to the holders of the dental licentiate ship, and the many other important questions raised in the article, we beg to entirely disclaim the Association, to the formation of which we are opposed, and to emphatically deny its claims to in any way represent the body which it professes to represent—namely, the fully-qualified surgeons engaged in the practice of dental surgery.

As it is believed that the number of fully-qualified surgeons practising dentistry in the United Kingdom does not greatly exceed fifty, the following twenty-five signatures, of London practitioners only, have been deemed sufficient. More might have been obtained, but at the cost of delaying the insertion of this disclaimer, which did not appear advisable.

Thomas A. Rogers, M.R.C.S., L.D.S.; Edwin Saunders, F.R.C.S.; John Tomes, F.R.S., M.R.C.S., L.D.S.; Charles Vasey, L.F.P.S., L.D.S.; Henry John Barrett, M.R.C.S., L.D.S.; Charles S. Tomes,

M.A. Oxon., M.R.C.S., L.D.S.; James Smith Turner, M.R.C.S., L.D.S.; Henry Sewell, M.R.C.S., L.D.S.; Ashley Gibbings, M.R.C.S., L.D.S.; Charles James Fox, M.R.C.S., L.D.S.; Frederick Canton, M.R.C.S., L.R.C.P. Lond., L.S.A., L.D.S.; Robert Hall Woodhouse, M.R.C.S., L.D.S.; Joseph Rogers, M.R.C.S., L.D.S.; G. A. Ibbetson, F.R.C.S., L.D.S.; Samuel J. Hutchinson, M.R.C.S., L.D.S.; Joseph Walker, M.D., M.R.C.S., L.D.S.; A. G. Medwin, M.D., L.R.C.P. Lond., M.R.C.S., L.D.S. L.S.A.; Ashley Barrett, M.B. Lond., M.R.C.S., L.D.S.; Henry Moon, M.R.C.S., L.D.S.; John W. Elliott, M.R.C.S., L.D.S.; William Gill Ranger, M.R.C.S.; E. Holborow King, M.R.C.S., L.D.S.; Edward B. Randell, M.R.C.S., L.D.S.; Thomas F. Ken Underwood, M.R.C.S., L.D.S.; John Howard Mummery, M.R.C.S., L.D.S.

London, May 30th, 1876.

* * Our correspondents will of course acquit us of having the remotest intention of reflecting on any qualified surgeons practising the specialty of dentistry. Our remarks to which exception is taken were directed with special application to men without any qualification. We have consistently supported the Association, because we believe that its members are actuated solely by an honest desire to elevate the status of the specialty, and that it reflects the aspirations of a large number of highly-qualified dental surgeons. With no desire to create a division in the ranks of an important profession, we still maintain that the promoters had a perfect right to establish such a Society as the one now the subject of controversy, and that ample justification for its formation is found in the laxity of the rules regulating admission into the Odontological Society, which cannot by its constitution be held to faithfully represent what is most advanced and most creditable in the specialty.—
ED. L.

TO THE EDITOR OF "THE LANCET."

SIR,—I am requested to ask you to be so kind as to insert the names of those gentlemen who have joined the Association of Surgeons practising Dental Surgery.

Yours, &c.,

HAMILTON S. CARTWRIGHT, Hon. Sec.

Samuel Cartwright, F.R.C.S., L.D.S.; Samuel James Augustus Salter, M.B. Lond., M.R.C.S., L.S.A., L.D.S., F.R.S.; Alfred Coleman, F.R.C.S. (Exam.), L.R.C.P., L.M., L.D.S.; John Smith, M.D., F.R.C.S., F.R.S.E.; John Hamilton Craigie, M.R.C.S.; Francis Fox, M.R.C.S., L.R.C.P.; James Andrew Baker, F.R.C.S., L.M.; Thomas Edgelow, M.R.C.S., L.R.C.P.; George Gregson, M.R.C.S., L.D.S.; George Parkinson, M.R.C.S., L.S.A.; Edwin John Winterbottom, M.R.C.S.; Hasler Harris, M.R.C.S.; C. Henry Bromley, M.R.C.S., L.D.S.;

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In addition to those who have joined the Association, Howard Hayward, M.R.C.S., L.D.S. ; Isidore Lyons, M.R.C.S., L.R.C.P., L.S.A., L.D.S. ; Robert H. Moore, F.R.C.S. ; and Alexander Morley, F.R.C.S., are seeking election.

Association of Surgeons Practising Dental Surgery.

TO THE EDITOR OF "THE BRITISH MEDICAL JOURNAL."

SIR,—In your last issue, Mr. Alfred Coleman, in writing about the Association of Surgeons practising Dental Surgery, expresses surprise that the "Odontological Society should have been brought forward as an object to which the new association was opposed," and then remarks upon the ignorance of the views and feelings of the promoters of the association shown by their opponents.

If Mr. Coleman will refer to the *Lancet* of February 26th, p. 325, he will there find an article which, in attempting to show cause for the formation of the new association, makes certain reflections upon the Odontological Society. I thought it my duty to repel those imputations, and wrote a letter, which appeared in the following number (March 4th, p. 371). To this letter the editor thought proper to add a paragraph, insisting on some of the views laid down in the article referred to as being correct. To this I made further answer by a letter, which appeared in the next issue of that journal. To both my letters, Mr. Cartwright, sen., did me the unexpected honour of replying in a later number of the same paper. This is the history of the first clashing of the new association with the old institution ; and, if it be true, it shows that the assault was made by the advocates of the new association, and not by its opponents, as I think Mr. Coleman rather unfairly asserts.

A great deal has been said about the success of this new association ; but its promoters have never published a list of its members. If they did so, I hesitate not to say that the number of dentists in its ranks is not much greater than is necessary to supply the usual staff of office-bearers, and that amongst the whole number, with one solitary exception, not one of the names loved and esteemed in the dental profession will be found. I think that an analysis of its members would show the medical press that the claims of this new association to consideration have been greatly exaggerated.

Trusting you may find space for this communication,

I remain, obediently yours,

JAMES SMITH TURNER.

12 George-street, Hanover-square, W., May 2nd, 1876.

TO THE EDITOR OF "THE BRITISH MEDICAL JOURNAL."

SIR,—The dental profession is under an obligation to you for devoting a portion of your valuable space to letters such as that of Mr. Turner, in your issue of to-day, in vindication of the course taken by those who object to the above Association. There can be no doubt that, had the usual and only proper method been adopted in the first instance in projecting the new Association, it would never have been founded. The proper way evidently was, to summon a general meeting of legally qualified dentists to consider the subject; and, if the result had been then favourable to the formation of the Association, no one could have justly complained. As it is, however, a few gentlemen, having no title to a position of authority, after meeting in private, have now, without the consent and against the wishes of the majority of their brethren, assumed a public position in the name of the profession, to represent which they have no real claim whatever. Before I and those who think with me apply for membership of the Association, we must be shown how it is capable of doing more as a separate body than could be achieved through the Odontological Society (the objects of which are the same), and with the co-operation of those able men whose labours and self-sacrifice have resulted in placing dentistry in its present respectable position as a recognised branch of the medical profession. We must be shown upon what grounds eminent and honourable practitioners possessing only the diploma in dental surgery—who are refused admission into the new Society—can be justly excluded from any dental association; we must be shown that their exclusion will not tend to lower the value of the dental diploma in the estimation of those entering the profession, and incline a still larger number than at present to commence practice without obtaining any qualification; and, lastly, we must be shown what is to compensate for the disunion in the profession, and for the ill-feeling to which the foundation of the new Association has already given rise. There is one leader in the profession who has done more towards its advancement than any living man, and whose personal qualities and high position render his opinion upon the present subject of far greater weight than that of any one individual who could be named; and when I add that I allude to Mr. John Tomes, I may venture to affirm that no one, either within or without the dental branch of the profession, will deny this assertion. Mr. Tomes, in declining the proffered membership of the Association—having expressed his agreement with all that has been urged against it—says he does so "under the firm conviction that an exclusive association, constituted as this one appears to be, will be powerless for good, but capable of doing great mischief." With this deliberate opinion, those who are intimately acquainted with the politics of the dental branch of the profession, can easily produce ample reasons for agreement.

I remain, your obedient servant,

HENRY SEWILL, M.R.C.S., L.D.S.

6 Wimpole-street, May 13th, 1876.

TO THE EDITOR OF "THE BRITISH MEDICAL JOURNAL."

SIR,—A letter published in your last issue from Mr. James Smith Turner, states that, in his opinion, the claims of the new Association

of Surgeons practising Dental Surgery to the consideration of the medical profession "have been greatly exaggerated."

Surely, sir, those who conduct the medical journals are at least as good judges of this matter as your correspondent, who, in the same letter, confesses to ignorance of the names, numbers, and status of the members of this Association.

I am, sir, obediently yours,

NATHANIEL STEVENSON, M.R.C.S.

51 Wimpole-street, Cavendish-square, May 16th, 1876.

TO THE EDITOR OF "THE BRITISH MEDICAL JOURNAL."

SIR,—The inaccuracies in a letter from Mr. Turner, relating to the new association of surgeons practising dental surgery, constrain me to crave your kind permission to answer it briefly, although it is a question whether it were necessary to do so.

I am surprised that that gentleman alludes to a certain recent correspondence in a contemporary, which I trust that all who are interested in this question will read, inasmuch as its result was to confirm the views of that journal as to the elasticity of the rules regulating admission to the Odontological Society in every particular, the weapons of its apologists being turned against themselves *most temperately* by those who, in self defence, were forced by them to take part in the discussion.

Mr. Turner seems to forget the share that certain special journals have had in initiating attacks, some of them of an exceedingly offensive and personal character, upon the promoters of the Association, his information concerning which must have been drawn from strangely inaccurate sources; and the ungenerous slur which he attempts to cast on many respected and respectable practitioners is not only objectionable, but unjustifiable. I would suggest to him that, if his assertion be correct, it may be owing to the fact that no great sympathy could exist between men who have such different views as to the best means of elevating the social and professional status of their profession, and who, above all, show their antagonism to that which, after all, is a mere difference of opinion, in a manner not only discourteous, but ungentlemanly. There is no hostility on our part towards those with whom we cannot agree, and it is a matter of regret to us to be obliged to enter the lists polemically, though it be only for defence.

Finally, as regards numbers, the success of our Society has been far greater than its promoters anticipated, bearing in mind the fact that a medical qualification is necessary for membership, the Society having no desire to swell its ranks by the admission of unqualified practitioners, and of those whose abstention from unprofessional practices for a short period is their sole claim to recognition. All reforms meet with opposition; but those who wish well to their profession regret to see such *animus* evinced against those whose object is solely to advance the position of their calling. If the new Association be so insignificant, it is strange that it has been capable of exciting so much jealousy and attention.

I am, sir, your obedient servant,

HAMILTON S. CARTWRIGHT.

Old Burlington-street, May 16th, 1876.

TO THE EDITOR OF "THE LANCET."

SIR,—Your excellent article of the 27th ult. on "Dental Anæsthetics and Dental Surgeons," and your attention to the recently-formed "Society of Surgeons practising Dental Surgery," appear to have created much unnecessary excitement amongst a certain number of qualified men who wish to pander to those who are disqualified from joining it, or simply to form a faction of opposition because they have not been instrumental in promoting it. All true reforms meet with opposition, and this one is no exception. But surely opposition should not come from those qualified to know how much such a society is needed. Let those gentlemen who declaim against your remarks scrutinise the list of members of the Odontological Society, and ask themselves if it be necessary to sweep the Augean stable or not.

I remain, Sir, yours faithfully,

CHARLES GAINÉ, M.R.C.S.,

Dental Surgeon to the Royal United Hospital, Bath.

Bath, June 6th.

TO THE EDITOR OF "THE LANCET."

SIR,—The persistent opposition of certain members of the Odontological Society to the new Association of Surgeons practising Dental Surgery is, I think, most unreasonable.

Of the "qualified surgeons engaged in dental surgery" who signed the protest published in your last number, and "entirely disclaim this Association," one attended the preliminary meetings, proposed the most important resolution, and assented to every one of the others.

In spite of recent events and suggestions, the Odontological Society has, I believe, deliberately declined to amend its rules. Reform, therefore, in these circumstances, must be, at the best, remote. I retired long ago from that Society, because I entertained a personal antipathy to those of its members who practised the specialty in a manner far removed from any notion of professional etiquette, and I have joined this new Association because I find it *must* exclude from fellowship all (whether qualified surgeons or otherwise) whose conduct is inconsistent with a higher standard of professional ethics.

I am, Sir, your obedient servant,

NATH. STEVENSON, M.R.C.S.

Wimpole-street, Cavendish-square, 6th June, 1876.

TO THE EDITOR OF "THE LANCET."

SIR,—I am glad to see in your number of this week expressions which will satisfy your readers that you did not in your article of the previous week regard as unqualified practitioners those gentlemen who have gone through a course of surgical study, almost equal to the present requirements, and far beyond that which at one time qualified its possessors for the membership of the College of Surgeons. The holders of the dental diploma also, at least those who have studied at the Dental Hospital of London, have been specially instructed in the administration of anæsthetics under such teachers as Messrs. Clover, Braine, Bailey, &c., and it would indeed be a hardship if after having passed their examination these should find their former teachers unable to meet them in consultation. A word also must be said on

behalf of a few who, though possessing no diploma, have for many years conducted their practices in such a manner that they might fairly be regarded as were those in medical practice prior to the year 1815; but in regard to such as have neglected to avail themselves of the opportunities offered in their day for becoming qualified, it is certainly a question how far the qualified practitioner can meet them on equal terms. The Association of Surgeons practising Dental Surgery, whilst it most strongly insists on the importance of all who practise that special branch being fully qualified, certainly, if I correctly interpret its views, regards in a very different light the holders of the dental diploma from the holders of no diploma; indeed, were it otherwise, it would be difficult to reconcile the consistency of those of its members who are, or have been members of the Dental Board of Examination at the College, teachers at the Dental Hospital, or even members of its committee.

I am, &c.

Savile-row, June 7th, 1876.

ALFRED COLEMAN.

TO THE EDITOR OF "THE LANCET."

SIR,—It would excite a good deal of public merriment if the Liberal minority in the House of Commons could be induced to publish a document disclaiming the Conservative majority, and emphatically denying its claims to in any way represent the body which it professes to represent; yet an almost analogous case is presented to your readers by the five-and-twenty qualified surgeons practising dentistry who have, in somewhat eccentric English, delivered themselves of a protest against the Association of Surgeons practising Dental Surgery.

No one can raise a doubt that it was open to them to disavow connexion with the Society in question, and even to express publicly disapproval of its tenets, if it pleased them to do so; but, to use their own words, and in the order in which they place them, "to entirely disclaim the Association," is an expression of feeling that can hardly fail to cause amusement.

The objects of the Society thus eloquently repudiated, its rules of action, and its hopes for the future, are too well known to you, Sir, and, through the unfailing sympathy and courtesy of the medical press, to most of your readers, to require recapitulation from me. One word regarding its success I may be allowed to add; for those who, like yourself, have from its commencement done ample justice to the motives of its promoters will learn with satisfaction that, although newly formed, with many to oppose and with much obloquy to endure at the hands of those who have resented what was unfavourable to themselves or their friends in the exclusiveness of its terms of admission, the Association continues to flourish, numbering already more adherents than those who have enrolled themselves as its opponents, aided and strengthened by the co-operation of many who, but for the rigidity of the governing principles at which its objectors have taken umbrage, could not benefit the Society as they are now doing by friendly contest upon equal ground.

Of the article in your journal which has indirectly called forth the public manifestation of antagonistic feeling it would not become me, as a member of the Association, to say much; but I may express my hope that those who gratuitously assume that it does injustice to the holders

of the dental licentiateship will duly consider, before advocating the claim of wholly unqualified men to administer anæsthetics, the position in which those they seek to encourage would find themselves if an untoward accident were to bring them face to face with a coroner's jury. It is possible that from this point of view the amateur anæsthetist might obtain a clearer perception than he had before enjoyed of the fit objects of his gratitude—whether those who had persistently warned him of the risks to which he was exposing himself, or the men who, themselves protected by legal qualification from the condemnation that might, they were aware, at any moment overtake him, had emboldened him to pursue a path ending in a dilemma from which there could be, for him, no possible means of escape.

In conclusion, I venture again humbly to record the Society's claim to represent the body of qualified surgeons practising dental surgery who are labouring earnestly and continually to raise the status of their specialty by the only means by which it can, in their opinion, attain its true position, themselves faithfully adhering to the principles that have found favour in the eyes of so many of their brethren, and venturing to look forward with confidence to the attainment of the object of their desire at no very distant period.

I remain, sir, faithfully yours,

WILLIAM DONALD NAPIER.

George-street, Hanover-square, June 7th, 1876.

When is the Use of the Gum-Lancet really Indicated ?

SIR,—Lately I have had varied forms of constitutional disturbance amongst children, ranging from seven to nine months old, but especially ailments connected with the nervous and respiratory systems ; and in nearly every case have the mothers and nurses regarded these maladies as peculiar to dentition, and that alone, and insisted on the barbarous empiricism of having the gums lanced, though they had nothing to warrant them in this, but that the child was near the end of the eighth month, when the first teeth should make their appearance.

When I was a student, lectures were given on the general management of teething children, to which I have adhered, and have seldom been disappointed ; but the other day, on refusing to accede to the popular demand of lancing the gums, much to my surprise I was shown an addition of a late work recommending this ; nay, more, by an eminent member of the profession, "On the Management of Children," which undoubtedly tended to justify their ill opinion of me, the rules laid down there being very different from those I had been taught.

No doubt, some of your correspondents have similar cases to deal with almost daily, both in respect to the nurses and children, and, perhaps, they would kindly let me know if they follow out in practice the coarse mechanical theory of the nurses, that all diseases that may come on during dentition must of necessity be connected with that process, and, at their request, lance the gums and thus retain their patients ; or if they scout this and all other meddlesome surgery, at the risk of losing a good patient, as I have unfortunately done in this instance.

Matfen, April 1st, 1876.

ROBERT TORRANCE.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM MAY 1ST TO MAY 31ST, 1876.

Extractions.	Children under 14	-	-	-	-	473
	Adults	-	-	-	-	602
Under Nitrous Oxide	-	-	-	-	-	303
Gold Stoppings	-	-	-	-	-	166
White Foil ditto	-	-	-	-	-	28
Plastic ditto	-	-	-	-	-	335
Irregularities of the	Teeth treated surgically and					
mechanically	-	-	-	-	-	20
Miscellaneous Cases	-	-	-	-	-	198
Advice Cases	-	-	-	-	-	136
Total						2261

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médical.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

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THE
Monthly Review
 OF
DENTAL SURGERY.

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From

JOHN WOOLCOTT, Esq.,

Fellow of the Royal College of Surgeons, England,
FOUNDER OF THE KENT COUNTY OPHTHALMIC HOSPITAL.

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THE MONTHLY REVIEW OF DENTAL SURGERY.

No. II.

JULY, 1876.

VOL. V.

A General Council of Dental Education and Registration.

The Dental profession has this advantage over the Medical profession, that, like a younger brother, it has the benefit of its elder brother's experience, and can both imitate its virtues and avoid its vices. Time was when the Medical profession was as undefined as the Dental profession at present is, but now, though still deficient in *esprit de corps*, it has become moulded into a definite body, its warring interests having been brought into harmonious working. When we inquire what it is which has brought this about, it is at once evident that the Medical Act of 1858, by which the General Council of Medical Education and Registration was created, has had more to do with it than anything else, for by defining accurately who is and who is not a medical man, it drew together the scattered members of the profession, and gave them one interest. When it first met the Medical Council was the scene of petty rancour and provincial bickerings, it is now a happier family than any like body in the world. This change inside corresponds to one which has been taking place without—a change which we wish to see introduced into the Dental profession, still torn asunder as it is by divergent interests, by varying codes

of ethics, by the jealousies of those who have not a surgical degree, against those who have in fact by all those differences in mental character which distinguish a body void of *esprit de corps*. We do not wish servilely to imitate the Medical profession, but we are strongly disposed to copy its successes, and, in the matter of a Council of Dental Education and Registration, we are convinced that there is no other course equally calculated to bring about the changes we wish for. The Medical Act of 1858 was passed because it was thought "expedient that persons requiring medical aid should be enabled to distinguish qualified from unqualified practitioners;" and we are convinced that it is equally expedient that persons requiring dental aid should know where safely to obtain it.

We propose that a Council be formed according to a Parliamentary Act to be obtained, for superintending the Education and Registration of Dental Surgeons. It should be formed as nearly as possible on the lines of the Medical Council, but it must be less unwieldy, and it must be more representative. Nine members—all of whom should be Fellows, Members, or Dental Licentiates of the Royal College of Surgeons—would be quite a sufficient number, and of these we should propose that two be appointed by the Crown, two by the Council of the Royal College of Surgeons, and the remaining five by the votes of the Dental profession. The Council once formed, it is not difficult to see what useful duties it might perform. First and foremost it should consolidate the profession by forming a Dental Register, to which shall be admitted all Dentists practising before 1859, and all Licentiates who have qualified since that date. The same privileges would apply to Dental registration as in the case of Medical registration. The Council would also have to superintend, and gradually to

elevate, the education of Dentists, and a third duty would be the publication of a Dental Pharmacopœia. Of other duties we need not now speak, but we are sure that such a Council—meeting once a year in London—would do much towards the gradual assimilation of the medical and dental profession, and in course of time, having fulfilled its duties and outgrown the necessity for its existence, it might gracefully expire in the arms of its elder brother, the General Medical Council.

Mr. Tomes on the Present Position of Dental Surgery.

TO THE EDITOR OF "THE LANCET."

SIR,—The attempt to bring the influence of the medical profession to bear upon the training of dental surgeons can be of advantage only when medical men are made fully acquainted with the scope and requirements of dental surgery, an accurate knowledge of which they do not at present possess. The existence of special journals, while they render great service in bringing before the dental practitioner all that relates to his calling, tends to remove from the eye of the general practitioner much that he well might know, and more that it is needful that he should know if he would form a just opinion of the present state of dental surgery. The absolute necessity for a long special training in order to acquire moderate capabilities as a dental practitioner is very generally overlooked, and the power to pass an examination in surgery and to write a prescription is accepted as a sufficient education for the dental surgeon. But those whose powers constitute them efficient judges know full well that there is little difficulty in recognising what is required in the treatment of a case, but very great difficulty in acquiring the power to carry it into effect. To take out a large portion of the softened tissue from a carious tooth and to fill

up the hole with a plastic material requires little skill; but to remove the diseased part as fully as may be, to leave the cavity in a form capable of retaining a long-lasting plug, and to introduce that plug—in fact, to perform the operation up to the highest standard of excellence, without an undue expenditure of time exhaustive to the patient and operator—requires great skill, a degree of skill gained only by patient training over at least two years in pupils naturally not inapt. Let any one interested visit the Dental Hospital, and watch the performances of students of one year, then those of two years' training, and, if possible, the operations of the more skilful teachers, let him then try his own hand, and all I have stated will be admitted. That which is true respecting filling teeth applies also to other dental operations. But the dental surgeon will be occupied three-fourths of his time in treating carious teeth, and, if his operations are rightly performed, he will have rendered good service, and secured the lasting gratitude of his patients.

Were it otherwise, we should find medical practitioners using the leisure hours of their early professional life in the performance of dental operations. In truth the education of the surgeon does not embrace dental surgery. A man may be a member of the College of Surgeons or Physicians or of the Apothecaries' Company, and yet know nothing of dental surgery; and it would be unreasonable, and, consequently, all but impossible, to impose upon him a long and expensive training in a specialty he is not specially destined to practise; and, again, the knowledge acquired would be speedily lost unless constantly practised. That which would be true of the general surgeon applies with equal force to the dental surgeon; whose knowledge of general surgery fades from disuse by the time he acquired his general diploma; for his specialty will, if rightly practised, demand all his time and

thoughts. He cannot remain an effective general surgeon if he would be a faithful dental surgeon. He may be a legally qualified practitioner, but, without use, the knowledge he acquired up to the level of a pass examination will speedily waste, and he will become morally disqualified.

These facts were fully recognised twenty years ago, when the College of Surgeons instituted its department of dental surgery, laid down a curriculum to be followed by students, and after examination granted a diploma of fitness to practise, under the title of Licentiate in Dental Surgery. In this curriculum certain subjects embraced in the general medical education, but scarcely needful to the dentist, such as midwifery, forensic medicine, and botany, &c., were left out, and in their stead special dental subjects were introduced, leaving the time and cost of the profession strictly unaltered. The wisdom of this course is shown in the fact that the Dental School formed to meet the requirements of the curriculum has from year to year increased the number of its students, who at the present time nearly approach one hundred; and that the education meets the necessities of the dental surgeon is proved by its voluntary acceptance by those whose purpose it is to follow dental practice. For it must not be forgotten that the legal powers given to the colleges in the dental charter are permissive only; hence the education is offered, not enforced. The value of the diploma has been steadily advanced by extending the educational opportunities, by gradually increasing the strictness of the examination, and by the addition of written to the *viva voce* questions. And the preliminary examination in arts now required of the medical student before entering upon professional studies will also be required of the dental student from October, 1877.

The licentiatehip is the qualification needed by the den-

tal surgeon, for no other indicates that the possessor is practically acquainted with dental surgery; and surely, if we would gain our living by dental practice, we must before all else be skilful dentists. I use the word *dentist* because the public will call us dentists, do what we will, just as they call the ophthalmic surgeon an oculist; and if we suffer, it will not be by the name, but by our want of worth.

I do not for one moment argue against the dental student taking a general medical qualification; on the contrary, I would urge the student whose means and time will allow, to take the Membership or Fellowship of the College of Surgeons or Physicians, and I would further advise him to take the B.A. of one or other of our Universities. But I do protest against the student making a general qualification stand in the stead, and take the place, of the special one if he proposes to gain his living by our specialty.

Dental surgery some years back suffered greatly from one or other of two conditions. The practitioner had at the outset only a general medical education, or in many cases he possessed no education at all, and the suffering is not yet at an end; but the wise course taken by the College of Surgeons has already very greatly reduced the evil, and will doubtless ere long, to the exclusion of the incompetent, provide the public with a very efficient race of practitioners.

It is reasonably hoped that the permissive education, the success of which no well-informed person can deny, will become compulsory, and that a distinctive line will be drawn between the competent and incompetent practitioner, recognisable by the public.

The membership and licentiatehip jointly may be said to meet the case, but they involve a higher and more costly education than either taken singly, and it is not reasonable to expect that all dental students will be prepared to meet

the demands of the double qualification. For such, and they will probably form the majority, at least for some time to come, the licentiateship will suffice, as being the educational equivalent of the single qualification in the general practitioner.

There has been much loose talk about the status of the dental practitioner. We had better work more and talk less upon the education of ourselves and our fellows. The Legislature can neither give nor withhold social status. The public will settle the question, and our position will be determined by our individual and collective professional and general culture, by our professional usefulness and scholarly attainments.

I remain, Sir, yours truly,

June 14th, 1876.

JOHN TOMES.

The Month.

THE LONDON DENTAL HOSPITAL.

A Governor of the Hospital wishes to know why it is that the last Annual Report of the Hospital gives no information as to the number of patients admitted during last year. The number of cases treated is published, but no statement of the number of patients.

BOURNEMOUTH.

Mr. W. Merson, L.D.S., R.C.S., has been appointed Dental Surgeon to the Bascombe, Portsdown, and Springbourne Provident Infirmary. Mr. Merson was a student at the London Dental Hospital, and is a brother of the present house-surgeon to that institution.

CONTINUOUS GUM WORK.

Mr. Fletcher announces that he has a new gas furnace for continuous gum work. It would be a great boon to be able to prepare this beautiful work at a moderate expenditure of gas and a reasonable length of iron piping.

The last furnace we tried for gum work two years ago certainly

did not answer. We shall watch the result of Mr. Fletcher's new furnace with interest.

Gum work ought to be more used in this country, and probably would be if a reliable furnace were well known.

DUBLIN DENTAL HOSPITAL.

Our friends in Dublin are founding a Dental Hospital, Mr. H. Clifford Eskell having first opened the Dublin Dental Dispensary. As advertised the Dental Staff of the Dispensary seems to consist only of Mr. H. Clifford Eskell. "N.B.—All absolutely poor persons receive dental advice and assistance gratis." We should like to know what is done for those who are not "absolutely poor." As "the Dispensary is open from 9 to 10 daily" we hardly see how it can be carried on by a single Dental Surgeon for any length of time. We should advise Mr. H. Clifford Eskell to combine with the promoters of the Dublin Dental Hospital rather than weaken the cause of Dental Progress in Dublin by any purely individual effort—that is if he is working for the good of his profession and the relief of "the absolutely poor."

SMALE'S FLASKS.

Messrs. Smale Brothers have brought under our notice some new Flasks, that are remarkably well made and very strong. We commend them to the notice of the profession.

KIRBY'S PNEUMATIC MALLET.

Mr. Kirby's Mallet we consider the most perfect invention of the last ten years. It is perfect, because it fulfils the purpose for which it is constructed, and because it accomplishes the work required of it by the most simple means. With this mallet a lower molar can be filled with gold, made perfectly solid, so that the surface will file and burnish, even though the mouth may be filled with saliva up to the level of the lower lip all the time that the gold is being packed in.

We do not ask any one to accept this statement, but advise every Dental Surgeon to get one of Kirby's Mallets and try it for himself.

The gold is not welded, but simply driven in and condensed by purely mechanical force. At the present time of year, with the thermometer very high in the shade, we have thought of Mr. Kirby as a benefactor every time we have put in a gold plug.

PYÆMIA FOLLOWING DENTAL CARIES.

The *Medical Times and Gazette* of the 15th inst. contains an interesting account of a case of pyæmia, under the care of Dr. Goodhart, at Guy's Hospital.

A Case of Spontaneous Hæmorrhage from the Gums.

By J. OTTLEY ATKINSON, L.D.S., R.C.S.

Cases more or less troublesome of hæmorrhage from the alveolus, after tooth extraction, are occasionally met with by every one engaged in dental practice, and the treatment is so well understood, that anything that could be said on this subject would be but a repetition of an oft-told tale; suffice it to say that, in all ordinary cases, *pressure* must ever be regarded as *the* remedy. The writer, during thirty years' experience, has never yet met with a case where the hæmorrhage could not be speedily arrested by a suitably-constructed lint plug, properly applied, and the pressure persistently and intelligently kept up.

The following severe case of spontaneous hæmorrhage from the gums (taken from the writer's note-book) differs from cases that are ordinarily met with by the dental practitioner, and on that account may be worth recording; although a case greatly resembling it in many respects is described by Mr. Salter in his admirable work on "Dental Pathology and Surgery," *vide* page 182.

At ten o'clock on the morning of June 25, 1873, Mrs. M., a young married woman, aged 23, in humble circumstances, was brought by two female relatives to the writer's surgery, and gave the following history of her case:—At two o'clock in the morning she awoke in great alarm at finding herself almost smothered in blood, the bed-clothes being completely saturated, and blood flowing profusely from her mouth, which she at first thought was coming from the throat, but on clearing the mouth found it proceeded from the upper gums on the right side.

With the assistance of her husband and mother, everything that suggested itself to them was tried to arrest the hæmorrhage, without any success.

This condition continued until seven o'clock, when she was taken to a surgeon, who, with his assistant, tried various remedies for two hours and a half, without any better result. The patient, who was becoming exceedingly weak, was now sent to the writer, with the message that he was to extract one or more teeth in order to get at the bleeding vessels, and thus be enabled to stop the hæmorrhage.

This advice greatly alarmed the patient and her friends, as they felt convinced she would soon bleed to death were any teeth removed.

The patient, who is tolerably healthy in appearance, has always enjoyed good health, and cannot account for this attack, as she has not previously experienced anything of the kind. She has not had a tooth extracted for the last six years, and on that occasion there was no bleeding worthy of notice. She suffers occasionally from toothache, arising from decayed teeth on the right side of upper maxilla. The patient states that she has been in the habit of pricking the gums for the purpose of making them bleed, and so obtain relief, but has no recollection of having done so lately. On proceeding to examine the mouth, after clearing away all the coagulated blood, &c., the blood was found to be welling up most profusely from between the right upper bicuspid, which were somewhat decayed. A suitable pad of lint was now saturated with perchloride of iron, and firmly applied with the finger and thumb to each side of the bicuspid—the object being to obliterate the bleeding vessels by firm and constant pressure. This almost immediately arrested the bleeding, and was kept up for twenty minutes, when, on removing the pad, the hæmorrhage returned without any apparent abatement. Another pad was applied in the same manner, and held firmly in the same position for nearly two hours, during which time there was no bleeding worth notice. At the end of this time, on the removal of the pressure, the pad was found firmly adherent to the gums, in which state the patient and her friends were directed to allow it to remain. After resting half-an-hour on the sofa, with no appearance of further hæmorrhage, the patient, who was exceedingly weak and unable to walk without assistance, was sent home and ordered to stay in bed. The two following days there was no return of the bleeding, the patient remaining in bed, and the pad still in position. She was now able to take fluids, a glass of wine, with egg beaten up, &c. On the third day the pad was removed, and the patient permitted to leave her bed. From this time she gradually regained strength (although was never like herself again) up to July 19th, when she was prematurely delivered of a child (dead), and died a few hours after her accouchement. The writer could not obtain the particulars of her death, but understands from her friends that she, as well as they, attributed it to the great loss of blood from the gums.

This case of severe hæmorrhage is not easily accounted for; the patient being advanced in pregnancy precludes a

menstrual explanation, and from the blood readily coagulating, with an absence of all symptoms usually seen in cases of purpura hæmorrhagica, an explanation from this cause is also precluded. In the previous history of the patient there is also an entire absence of a hæmorrhagic diathesis.

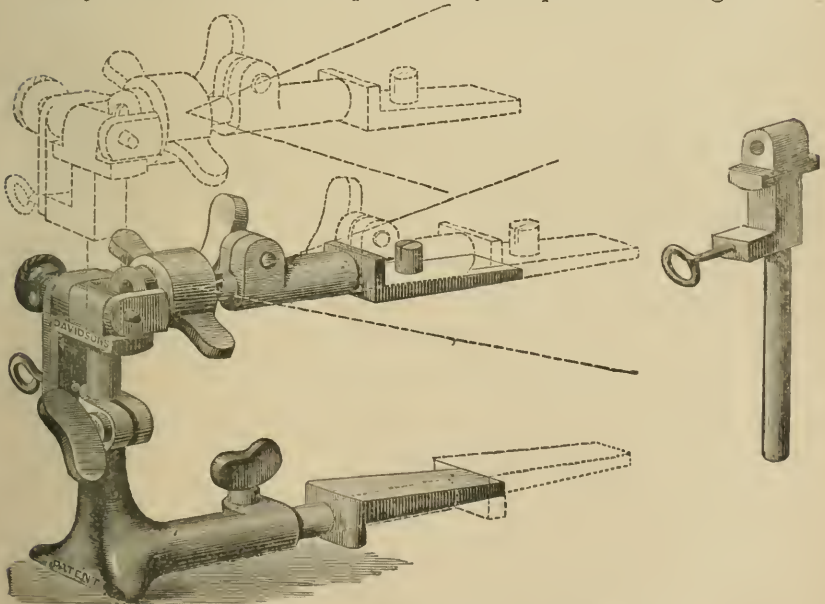
The treatment in this case shows what may be done by firm and well-directed pressure. Finger-and-thumb pressure is somewhat primitive practice; but the case was urgent, and nothing better was convenient to hand. The writer had not then seen the simple but useful contrivance invented and described by Mr. Salter in his latest work.

Kendal, July 5th, 1876.

New Articulator, with Set or Lock Pin Arrangement.

By GEORGE GENESE DAVIDSON.

In again calling the attention of the Dental Profession to my Articulator, I wish particularly to point out the great



advantage of the *lock pin* arrangement, whereby the models can be permanently set at any angle or position, so that

an alteration of the bite cannot possibly occur after the instrument is *locked to the bite*, nor can the workman make a mistake in arranging his work, and it always allows the exact position to be again obtained for any future occasion.

The engraving shows the Articulator set at right angle with short sliding bar, and the dotted lines with the long sliding, set at their lowest back position half-size of the instrument. The V-shaped lines show the direction the models can be moved by the ball-and-socket joint, and will draw longer and wider in all those directions.

The advantages are very numerous and its working absolutely perfect, as I have made up to this time by using it 130 cases without one misfit or an alteration of the bite being necessary after finishing the work.

One feature is *that it allows the models to be made on the Articulator* when it is first made from the impression, and in a moment it can be *adjusted to any bite that any case may require*, without any further use of plaster.

The operator can arrange the bite in one minute and lock it in that position, and keep it so while the case is being set up, and instantly lock or unlock it during the process of setting up.

The Articulator may be seen in use at my workshop any Tuesday, by appointment, after four p.m., and when the simple way it is adjusted is once seen and the perfect work that can be produced by its use more known, few dentists, who value putting perfect work in the mouth, will be without one of these Articulators.

415 Old Kent-road, London.

Oral Electricity.

By HENRY S. CHASE, M.D., St. Louis.

(*Read before the Illinois, Iowa and Missouri State Dental Societies.*)

The oral cavity may be compared, in some sense, to a single cell of a voltaic battery, The mixed saliva of the mouth, with the decomposing particles of food which it contains, together with the acid of fruits, drinks, &c., will answer to the fluid of the cell. So, of course, the greater the departure of the oral fluids from a natural and purely neutral, or slightly alkaline saliva, the greater the chemical effect on the dentos.

Voltaic electricity having the power to disintegrate even metals, as well as animal and vegetable substances, it also has the power to disintegrate dentos.

The rapidity with which this may be effected must depend on the quantity and intensity of the battery. Ordinarily, the healthy mouth is *not* in a condition to decompose dentos, *appreciably*. Where the teeth are all sound, and the oral fluids are in a perfectly physiological condition, the mouth is not a voltaic battery, for everything being in harmony no chemical action takes place. But thermo-electrical currents may be produced by sudden changes of temperature. When hot or cold drinks or food is received into the month, the temperature is not changed in all portions at the same time, and that which takes place between metals on heating them, may also take place here, and cause electrical currents. There are more or less hiding-places in the fissures of the teeth, and between the latter, in which the mixed saliva has sufficient power to set up electrical action. The result of my experiments show that even river water, by its action on metals, will produce a decided current, which can be seen in the deflection of the needle in a galvanometer.

There is, probably, more or less electricity evolved in the ordinary mouth nearly all the time, more especially if there is a tooth plugged with *any metal whatever*.

Electrical currents probably do no harm, excepting where by their quantity, intensity, and constant direction they produce chemical disintegration of dentos, or produce pathological changes in the pulp, or contents of the dentine tubes.

When plugs leak, so as to allow the mixed saliva to permeate between the walls of the cavity and the plug itself, we have in each such tooth a battery; and there are as many batteries, of a single cup each, in the month, as there are such leaky plugs.

We have this same condition of things when a plate of impure zinc is employed in a voltaic battery. Between the particles of iron which the zinc may contain, and the zinc itself, innumerable batteries are formed; the sulphuric acid acting upon these metals with different degrees of energy.

Although voltaic batteries are usually made with one metal which is not acted upon at all by an acid, and another metal which is very easily acted upon, yet we will find that currents of electricity can be evolved by the use of two dissimilar metals, *both* of which are acted upon by chemical agents, or between them and other substances.

The electrical current passes from the positive element to the negative one; and that element is positive which is the *most* easily acted upon by the fluid in which the elements are immersed; and that element is negative which is less acted upon than the positive one with which it is in circuit.

Changing the fluid of the cup will often change the relative positions of the elements. Lead is *positive* to copper in nitric acid; but in a solution of sulphide of sodium *copper* is positive to lead.

In voltaic electricity those substances which are least easily acted upon, chemically, are called the least potentials—that is, having the least electro positive qualities. The elements of batteries, which are sometimes found in the mouth, are enamel, dentine, muscle, gold, dental amalgam, tin, gutta serena, oxy chlo. zinc. As will be seen in the experiments, accompanying this paper, the relation which these substances hold to each other, may vary in potential, according to the fluid in

which they are immersed. Any of the above substances touching each other in the mouth, form batteries of one or many cells, the intensity or power of which are determined by the condition of the oral fluids, and the relative positions which the substances sustain to each other. Each metallic plug forms a battery by its union with the tooth in which it is placed.

If the plugs are water-tight then the electrical action is limited to the margins of the plug ; but if the plug is leaky then there is electrical action set up within the cavity at every point at which the filling and the dentos touch.

Dentos is a very bad conductor of electricity, and therefore in my experiments with the galvanometer the record of deflection of the needle does not indicate the power of dentos as a positive element in the oral battery.

In regard to the facility with which the following substances dissolve or lose in weight, in acid solutions, the following order is obtained by my experiments, viz. : Dentos, or Tooth Substance ; Smith's Oxy. Cl. Zinc ; Fletcher's Enamel ; Hill's Gutta Percha ; Tin ; Dental Amalgam ; Gold.

If the four first were better conductors they would undoubtedly show a deflection of the galvanometer needle, when associated with gold in a battery, much greater than the two last. But if this list is made up from battery and galvanometer experiments, I have to place them according to the following order as to their potential on the positive scale : Tin, Amalgam, Dentos, Muscle, Ox. Cl. Zinc, Hill's Gutta Percha, Gold.

But this would evidently be incorrect, because the electrical action between two substances is none the less on account of the *resistance* offered to the passage of the current.

Zinc and Platinum make a powerful battery, but if the current has to pass through a poor conductor, such as dentos, or Hill's gutta percha, the deflection of the needle would show a very feeble current passing. In this case the electric current is changed into heat.

When two elements are acted upon chemically, but in different degrees, the one which is positive in relation to the other, when placed in the circuit, will be dissolved at the expense, so to speak, of the negative element. Example : Place a copper plate and a zinc plate in dilute sulphuric acid, joining them by a wire, or allowing the metals to touch each other at the upper end. The copper will be negative to the zinc, consequently the copper will not be chemically acted upon, and will lose none of its weight ; but the zinc will be acted upon, lose weight, and send a current from itself to the copper ; the action is on the zinc alone. In a stronger fluid both might lose weight.

Every material which is used for plugging teeth is negative to dentos ; consequently, dentos is placed in a critical position by every plug which it receives, because it is *positive* to every dental plug. The only safety for a plugged tooth is in a perfectly neutral condition of the saliva. That material, which stands nearest to dentos on the potential scale, would give the greatest assurance of safety, so far as disintegration of tooth substance could be caused by electrical currents, and by its association with a negative substance to form a battery.

The most powerful current doubtless would be within a plugged cavity which contained a plug admitting the mixed saliva of the mouth.

The latter would soon become acidulous, and setting up action upon the dentos, there would be currents at every point of contact of dentos and plug.

The current between a plug and dentos is so feeble that it is not usually noticed by the person in whose mouth the action is taking place.

When there are plugs of different substances in teeth, there is no appreciable current developed between the plugs, unless they are in contact. Even if in the same tooth, the dentos is too poor a conductor to convey an electric current with any degree of intensity.

When two metallic plugs touch each other, either in the same tooth, or in different teeth, a current is evolved which is constant, however feeble.

This current may be constantly interfered with, and the current more or less stolen by the contact of the tongue or cheek, or contact of food; for these are conductors of electricity, and very good ones, too.

In my experiments, I found muscle a very good conductor, and also a very good element for the production of a current.

A piece of muscle impacted between two teeth, or crowded into the crevice of a tooth, will produce a considerable current. When there are two plugs facing each other, of different metals on the proximal surfaces of teeth, and a particle of meat is impacted between them, a current of electricity is evolved which is usually so annoying that the removal of the substance seems an immediate necessity to the individual.

This is more especially the case if one of the plugs approaches the dental pulp closely.

It certainly is a very comfortable provision of nature that dentos is such a poor conductor of electricity.

Between a gold plug and dentos there would be a stronger current produced than between amalgam and dentos, or tin and dentos. The current would be from the dentos through the liquid to the plug in the case of either of these metallic substances. But it would be strongest between gold and dentos, because the latter is further from gold on the potential scale than from either tin or amalgam.

In some way, not yet understood, the voltaic current alone, by itself, promotes disintegration. Not only that, but it *produces* disintegration. Example: When the ends of two conductors from a battery cell are immersed in another vessel containing water, the latter is decomposed, and its hydrogen and oxygen may be caught, measured and tested.

By this method various solutions are decomposed, and the process is called *Electrolysis*—the fluid undergoing decomposition being named an electrolyte.

A healthy tooth situated in a corrosive oral fluid, is like a battery of one cup, where there is *one* metal and two fluids. And such is a "*Daniel's Cup*." There is a mild, healthy blood plasma in the substance of the dentos, and a *corrosive* liquid outside; the two liquids *touch*, but do not commingle, and so there is electricity evolved, and the current is from the *outside* of the tooth to its interior.

May not this fact give us a hint in regard to the inception and progress of dental decay?

This oral battery would be still more powerful if the dentos was

chemically eroded or necrosed at some point. We often find the enamel porous and easily cut at some point of proximate contact, before there is a cavity at all. Now when this porous dentos becomes filled with the corrosive fluid formed from food, mucus, saliva, and acids, and it enters the tubuli so far as to touch the blood plasma, a condition for active and powerful electric action is produced.

The current produces decomposition, and so the corrosive fluid is kept constant.

In this way may it not be that decomposition of the tube plasma, beyond the territory of actual decay, causes subacute inflammation of the pulp, which may lead either to the death of that organ, or stimulate the latter to the production of new dentos to protect itself from the advancing decay. And may not this electric current itself cause a deposition of lime salts from the blood plasma in the dentine tubes? What we know of Electrolysis suggests the thought.

Dentos being such a poor conductor of electricity, the current could only be feebly passed from tooth to tooth, where they were all in actual contact, even when the teeth are plugged with metals far distant from each other on the potential scale, namely, between gold and tin.

In the buccal surfaces, plugs which might form a strong battery, as gold and tin, the mucous membrane of the cheek would form a better current than the teeth themselves, but then such a conductor would practically carry the current all over the mouth, and being so diffused would not be felt, and would also lose its power to do harm.

When a plug oxidises, voltaic action diminishes or ceases. Between gold and tin, or between gold and amalgam, the current is diminished just in accordance with the amount of oxide remaining on the plug; for the latter becomes less positive to the gold, and less negative to the dentos.

The changing thermal conditions of the mouth may perhaps change the relative potential of plugs if they are near to each other on the scale.

Gold, which is so far removed from dentos, tin, amalgam, &c., would probably always maintain its negative position in the oral battery. But tin, dentos, &c., might perhaps exchange places under some thermal conditions.

Electrical currents are produced by thermal changes. Then may not pathological effects be produced in *undecayed* teeth by frequent extreme changes, so as to result in exostosis, calcification of the pulp, or necrosis of the latter.

Example.—A piece of antimony and a piece of bismuth, with one end of each placed in contact, and heated, even with the warmth of the tongue, will develop a current which will deflect the magnetic needle. Extremes of temperature favour the development of the current. If one metal be heated, while the other is cooled by ice, a more powerful current is evolved than otherwise.

Two metals of different temperatures, immersed together in a liquid, will develop a weak current of electricity.

Two plates of the same metal, at different temperatures, immersed in one liquid, develop a weak current of electricity which passes from the hot to the cold metal.

A cold cathode, immersed in a warm depositing liquid, causes a deposit to take place with more facility than when immersed at the same temperature.

Usually no current will be evolved between metals unless there is contact. But "Guthrie" says a current can be produced by two metals and two liquids *without* contact of dissimilar metals. He also says that contact between a single metal and a liquid can produce electrical excitement.

Texture of metallic surface affects polarity. A rough surface and a smooth surface with the *same* metal will cause a current to pass from the rough to the smooth one. The rough surface is positive to the smooth one. Tin and gold are sometimes used in making cylinders. In such cases the tin should always be on the *outside* of the gold, so that the tin may come next to the *dentos*. For although a current would pass from the *dentos* to the tin, yet it would not be nearly as strong, as though the gold was next to the *dentos*. In packing such cylinders, the two metals would become mixed on the surface of the plug, and then the latter would partake of the nature of an alloy. This alloyed surface would be less in potential than gold. It would be better than gold for *preservative* purposes, and better than tin for masticatory purposes. Thus the usefulness of this method would be limited to *grinding* surfaces.

But a better method to use tin and gold in the same cavity is to employ cylinders of tin only, and of gold only; always keeping the tin next to the walls of the cavity alone, and using only gold in the centre of the plug.

The galvanometer experiments which accompany this article can be regarded as only approximately true so far as locating on the potential scale the different substances, other than *metals*, which occupy the mouth.

The proper mode in which to obtain the knowledge of their potential position is to take equal superficial surfaces of all of them, weigh them after having soaked in water until they refuse to gain more in weight, and then put them into various chemical corrosive fluids, under the same conditions; the loss in weight, sustained by each substance, will enable us to place it in its true position on the potential scale. By trying a great number of experiments, I believe I have arrived at the truth. That you may judge for yourselves I herewith append a copy of those experiments.

If I have stated nothing but that which is regarded as true by experts in electrical science, and if my experiments are confirmed by others, then, whenever these truths become widely known, there must result a great modification in modes of practice.

Gold can then no longer hold its present position as an arrestor of dental decay, it must share its honors with amalgam and tin, and, in some cases, take a position inferior to both. As gold, united to *dentos* forms a more powerful battery than does *dentos* united with any other plugging material used by our profession, it is only in the most healthy and cleanly of mouths that it is admissable. The hygienic habits of the patient must be also considered, for if acids are freely used, and hot and cold drinks alternately and in quick succession, then also gold is the worst plug that can be employed in the teeth.

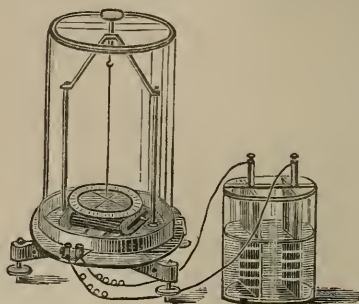
I am speaking *only* of the *preservation* of the teeth, and not of dental æsthetics.

As for myself, I hope to use the knowledge which I have gained on this subject, for the great good of my patients, without regard to my *former* opinions, or those of others.

In my experiments I used a battery of a single cell and a galvanometer, taking care to eliminate every source of error.

In speaking of the elements, the positive one will always be written first.

GALVANOMETER AND BATTERY.



Nitric acid 1 part, Water 20=1-20th.

Tin and gold—deflection of the galvanometer	. . . . .	90°
Amalgam and gold	. . . . .	82°
Muscle and gold	. . . . .	20°
Tooth and gold	. . . . .	20°
Tooth and tin	. . . . .	60°
Tooth and amalgam	. . . . .	10°
Tooth and muscle	. . . . .	5°

Hydro Chloric Acid, 1-20th.

Tin and gold, deflection of needle	. . . . .	73°
Amalgam and gold	. . . . .	70°
Muscle and gold	. . . . .	5°
Tooth and gold	. . . . .	22°
Tooth and tin	. . . . .	60°
Tooth and amalgam	. . . . .	10°

Sulphuric Acid, 1-20th.

Tin and gold, deflection of needle	. . . . .	77°
Amalgam and gold	. . . . .	80°
Muscle and gold	. . . . .	5°
Tooth and gold	. . . . .	10°
Tooth and amalgam	. . . . .	5°
Tooth and tin	. . . . .	15°
Tooth and muscle	. . . . .	2°

Strong Cider Vinegar.

Tin and gold, deflection of needle	. . . . .	40°
Amalgam and gold	. . . . .	25°
Muscle and gold	. . . . .	8°
Tooth and gold	. . . . .	10°
Tin and muscle	. . . . .	5°
Amalgam and muscle	. . . . .	2°

Water of Ammonia.

Tin and gold, deflection of needle	15°
Amalgam and gold	3°
Tooth and gold	0
Tooth and tin	0
Tooth and amalgam	0

Fresh Saliva.

Tin and gold, deflection of needle	3°
Amalgam and gold	12°

Saliva and Tobacco Juice.

Tin and gold, deflection of needle	2°
Amalgam and gold	9°
Muscle and gold	3°
Tin and muscle	8°
Amalgam and muscle	7°

I have already remarked, that substances standing very near to each other on the potential scale are liable to exchange places with each other on the list, by being placed in a different liquid.

I will call your attention to this fact in regard to tin and Fletcher's alloy, the latter being the one which I used in galvanometer experiments. This alloy, or amalgam, stands between gold and tin; that is, it gives the least deflection of the needle when united with gold in a battery having for a fluid either dilute nit. acid; hy. cl. acid; water of ammonia, or cider vinegar. But tin stands between Fletcher's alloy and gold, when united to gold in saliva and tobacco juice, pure fresh saliva, or sulph. acid.

Immersion of substances in acids for specified times to ascertain per centage of loss.

Ivory, dentine (dense)	7½ per cent. loss in Cider Vinegar	24 hours.
"	8 " " Nit. Acid, 1-20th	24 "
Enamel of " tooth	40 per cent. loss in Nitric Acid, 1-20th	24 "
"	49 " " " 1-20th	24 "
Smith's Ox. Cl. Zinc,	35 per cent. loss in Nit. Acid, 1-20th	24 "
"	27 " " Cider Vin.	24 "
"	41 " " Sulp. Acid, 1-20th	24 "
"	21 " " Hy. Cl. " 1-20th	24 "
Fletcher's Enamel (ox. cl. zinc)	8 per cent. loss in Vinegar	24 "
"	19 per cent. loss in Nitric Acid, 1-20th	24 "
Hill's Gutta Percha,	½ per cent. loss in Nitric Acid, 1-20th	24 "
Johnston's "	00 " " 1-20th	24 "
"	1½ " " Hy. Cl. Acid, 1-20th	24 "
Tin, lost 00 in Vinegar	" " "	7 days.
"	⅓ per cent. in Lemon Juice	7 "
"	⅓ " " Hy. Acid, 1-20th	24 hours.
"	7 " " Nit. Acid, 1-20th	24 "
"	½ " " Sulp. Acid, 1-20th	24 "
Amalgam lost ¼ of one per cent. in Lemon Juice	" " "	24 "
"	00 in Sulp. Acid, 1-20th	24 "
"	1-15th per cent. in Hy. Acid, 1-20th	24 "
"	1½ per cent. Nit. Acid, 1-20th	14 "

Fletcher's Amalgam, 400 c.g., lost 00 in Hy. Cl. Ac., 1-10th	50 days.
Amalgam, 1500 c.g., lost 1-20th per cent. in Sulp. Ac., 1-20th	14 "
" " " " 1-33rd " Hy. Cl. Ac., 1-20th	14 "

The above are only representative experiments. The whole number is too tedious to report, amounting as they do to several hundred.

The Health of the Dentist.

By C. W. WRIGHT, Basel, Switzerland.

This is rather a dangerous subject I will admit, though it has been discussed and written about for several years past, and to many is one of deep importance. It is dangerous, however, when not treated in a proper way, for if the authorities proclaim from the house-tops that the calling of the dentist is an unhealthy one, and that "the average period of health in active practice for the dentist is about eight years," the result will be that from three-fourths to nine-tenths of the average practitioners will accept the doctrine, and begin to search throughout their systems for some signs of approaching dissolution of the functions. Some will discover a pain in the side, and conclude that the *liver* has been squeezed out of shape by the position occupied at the operating chair. Others will find that the side light from the window striking obliquely on the corner of the right eye tends to inflammation and ultimate loss not only of this organ, but of everything necessary to an operator. Others, again, will discover that the fumes from sulphur matches, employed two or three times a day in lighting their annealing lamps, by entering the lungs, will produce serious difficulty in the breathing apparatus, and the *end* can be calculated upon. Some will notice varicose veins from standing. Some will have rheumatism in the left shoulder from mixing mercurial fillings in the palm of the left hand, and others will break down altogether from the nervous strain upon them caused by working six or eight hours a day at dentistry. That dentists must die in common with other professional men, in course of time, is true. That a dentist in full practice must be a hard worker is also true, and especially if he is a student of his science as well, or is engaged in teaching in the dental schools or in editing a dental journal. Dentists have been prodigious workers in the professional schools and in science. Dentists have

worked splendidly for themselves, for their profession, and for the public. To these hard workers, these early and late men, is the profession itself, the position it holds in the world and the advancement it has made, entirely indebted. But as a rule, these are not the men who have had time to mourn over the "cramped liver" or the effects of a match fume. If statistics prove that dentists are less healthy or less liable to longevity than those engaged in other civil pursuits, the fact that a large number of delicate men, of men with originally bad constitutions, have entered the profession should be taken into account. Charles has always been troubled with a cough—his father died of consumption; therefore Charles must look about for some light, genteel occupation, and as the dentist of the neighbourhood, Dr. Prettyman, always looks so nice and clean, with such shiny boots, and with perhaps leisure every evening, Charles has observed him, and thinks this light office business, where the birds sing to you while you work and fishes peep at you from the aquarium, must be just the thing for him with his delicate chest. The result is one more *unhealthy* dentist to add to the statistics. Or, again, William, familiarly called Bill, has concluded that to follow the plough all during the Spring, to plant, to hoe, to feed the cattle, and then to find that on account of a drought, or a hard blow, or too much rain, the most of his labour and sweat has been in vain, is not the most encouraging of occupations. He determines on a rise in life, a change of calling, and seeing Dr. Stout in his office, with white hands, and miniature hoes and miniature threshing machines, not caring, "apparently," for rain or shine, the idea enters William's brain—"Why not go and do likewise?" So this fine, healthy country boy, with an appetite equal to one of his oxen, commences the study, and this change from exercise and free air, with his appetite and idea of a *feed*, to a student's life in confined air, soon tells on his health and spirits, and no wonder that in "eight years" William is counted as another sacrifice to dentistry. These are neither fancy pictures nor uncommon ones, as everybody knows, and yet the calling of the dentist is charged with the odium of being unhealthy. Let somebody prove if they can that dentistry, followed intelligently, with ordinary and comfortable regard for ventilation, bathing, exercise, and personal habits and appetites, will break a man, as the saying is, or injure his health in any way, in

eight years, provided that at the beginning he has ordinary good health, and is either accustomed to some indoor life, or knows enough to make a gradual but radical change of habits if he is not. I do not think it can be proved, and I think the contrary is true—that is, that the serene life, the healthy stimulus of the most interesting studies, and the occupation of the hands in most interesting operations that the dentist has, are the best means of securing health to mind and body. Like an appetite or a desire of the mind or body, dentistry in itself is a healthy occupation, though like any natural appetite it may be sadly abused. The abuse of good things should not be placed to the discredit of the good things. Let the dentist first keep his hands and brains sufficiently employed with his occupation to prevent hobgoblins of livers cramped, or dyspepsia, or mercurial poisons from frightening him. Let him forget that he has any special pet function that must be peeping at him from every dish on the table, or every hour that he remains in one place, to remind him “to take care of me.” Let him *live well* in the full sense of the word, and cultivate a faith in God and a serenity of habit, and he will be all right. If after a day’s work he feels fatigued, let him rest absolutely or play like a boy, or go to his club, or if over here let him go to his café and smoke his *good* cigar, if he is fond of it, or meet his friends in a social way for an hour. I do not wonder that the complaint of the dentists about their health is becoming almost a proverb when I see how many of them live. For instance, one of the ill ones gets up at four or five o’clock in the morning and rushes over hills and valleys in search of physical health, returns a little before eight, swallows a breakfast arranged according to some *notion* about bones and muscles, and at eight begins with his patients. At half-past twelve a good, big dinner is eaten, with a dessert of pudding (this dinner taken with a glass or two of red wine), at half-past one or two business commences again, and till four the weary time is dragged out. Then, if not *too* much exhausted, some miles must be walked over to refresh and get *exercise*, and by eight o’clock the poor man is much more tired, much more worn out than any farmer in the land, and yet he has earnestly sought to keep his *liver* in motion. Dio Lewis’ notion of light suppers or no suppers is generally followed by *seekers* after *health*. Is dentistry responsible for all this? Is it natural that we

should first tire ourselves out physically before being in condition to bring our minds and hands to perform dental operations? Is it proper that we should take a full meal in the middle of our work? The dentist should arrange his hours to suit his mental and physical *convenience*; should take his *dinner* after the heavy labours of the day; should keep mind and body as clear and light and free from outside care and fatigue as possible; should forget that he has a liver or a stomach; should be cheerful and industrious, and let nature and the impulses of nature have some play. I have tried to defend the calling of dentistry against the charge of causing the ill-health of dentists. Outside of our profession I presume we are as prone to the ravages of time and tide as the rest of humanity, but no more, at least.

A Few Words on Salicylic Acid.

By R. GUNTHER,
K. K. HOFZAHNARZT.

Having made experiments in my laboratory on the solubility and the possibility of applying the marketable salicylic acid to dental purposes, I came to the certainty that the above is not perfectly pure, as in the experiments there was always insoluble remains to be seen.

I dissolved for the purpose of cleansing a large quantity in hot absolute alcohol, filtered the brownish red solution, and found in the filter a crystallising grey substance, which I have not yet thoroughly examined, but which at all events is present as a foreign body.

For the purpose of rapid crystallisation, I allowed half the quantity in solution to evaporate, and on its becoming cool the mass stiffened to a pale pink crystal cake.

On drying this on blotting-paper the outer surface showed a reddish brown flush, against which the interior appeared quite white. On the second crystallisation of the preparation and evaporation of the part filtered the acid shot into tuftlike united strong needles, which on becoming dry appeared of white colour glistening like silk.

I then went further in my examination, and strove to get the sublimate of the uncrystallised acid.

On evaporation there appeared at first an aromatic pleasant smell, which later, by greater heat, was quite the opposite, reminded one of carbolic acid, and produced severe

coughing. (The salicylic acid appeared by great heat to divide again into its original elements).

The sublimate was colourless among the quantity of white glistening needles, which partly were precipitated on the glass bell, but mostly lay on the floor.

I sought for a re-agent to convince myself that the preparation did not lose its essence through sublimation, and found this in a marked form in ferrum ses-quichloratum. The reaction by the slightest trace of salicylic acid gave a beautiful violet colouring, and this property was identical both in the raw product and also in the sublimate of the purified preparation. The pink colour of the marketable preparation and the insoluble remains by the solution on the filter are therefore bodies which are prejudicial to the purity of the acid.

The solubility of the doubly crystallised salicylic acid gives a better result than the raw marketable, and is set in normal temperature in absolute alcohol at 33 per cent., in sulphuret of potash at 46 per cent. The solubility of the raw product in water gives 0.2 per cent. By greater heat these liquids take up a large quantity of salicylic acid; upon the surplus quantity takes the form of needles on becoming cold.

The use of salicylic acid in inflammation of the pulp or of its surroundings is difficult, particularly in the last case, and I make use in certain cases of the etherial solution, with which I saturated lint and pressed into the cavity; then by a weak stream of warm air the ether rapidly flies off and the salicylic acid remains in the form of frost in the cavity of the tooth.

It follows, then, in those cases where the use of salicylic acid in mass is wished the etherial solution does very good service, as the latter, evaporating quickly, leaves the salicylic acid behind it quite pure. On the contrary, where the working is desired in the fluid form, the best way is to use a solution in alcohol or alcohol and water.

Facial Neuralgia, deriving its Origin from Abnormal Complications in the Teeth or Mouth.

PRIZE ESSAY, by J. F. BADCOCK, D.D.S.

An article upon Facial or Dental Neuralgia, to be in any degree exhaustive or comprehensive, is from the start pre-

destined to be of considerable length, but at the risk of wearying my readers I must, at the commencement, erect a foundation which will afford me a substantial basis upon which the future structure of this paper may rest. Neither shall I make any apology for the conversational style in which this article is written, since it is my purpose, and will be my endeavour, to render my illustrations, assertions, and deductions as comprehensive and distinct as it may lay in my power to do.

The term neuralgia is a compound one derived from two Greek roots which signify "nerve pain," but as all pain, wherever located, or whatever its nature may be, is equally as certain to be "nerve pain," it would almost seem that the use of the term to indicate any special region of pain was, to say the least, questionable. Neuralgia, as we familiarly understand its application, does not necessarily indicate the locality of the pain suffered, but its signification is more commonly illustrative of a *condition* rather than a *cause*. My paper, however, has for its province the treatment of facial neuralgia dependent upon diseased teeth for its lesion; and as the citadel of facial neuralgia is necessarily confined to the region of the face, it may not prove amiss that upon the very threshold of this article we inquire, at least in a general way, into the *nerve* anatomy upon which facial neuralgia is exclusively dependent. First, then, we have the superior maxillary nerve, which arises from about the centre of the Gasserian ganglion, travelling a more or less devious path to the points of its ultimate destination. The nerve under consideration is the second division of the fifth pair, supplying with its filaments the superior teeth, the nose, lower eye-lid, antrum, labial glands and the upper lip, together with nearly the entire integument of the superior facial region.

The inferior maxillary nerve is a compound nerve, both motor and sensory in its character, the latter portion taking its rise in the Gasserian ganglion, and ultimately distributes its filaments, after having previously united with the motor portion so as to form one cord to the inferior teeth, the tongue, the integument of the lower lip, and to the digastric muscles—and when in this connection the fact is taken into consideration that the posterior lower molars are situated only at a short distance from the external auditory passage, the tonsils and parotid region, and that the roots of the

superior molars are close to the orbit and its contents, and posteriorly approach the speno-maxillary fossa and fissure, then the immense area of pain, as connected with neuralgia in the facial region, the origin of which may, and in fact does, depend upon a diseased tooth, thereby giving rise to an irritation of more or less of these nerve filaments, must to a certain extent be comprehended and appreciated, thus rendering it a simple matter to account for the sometimes serious complications which are the direct result of periosteal inflammation connected with the roots of diseased teeth. Facial neuralgia in its strictest interpretation, and as it is made to have a definite application, consists of either a local, paroxysmal, or metastical pain, the origin of which the patient cannot usually determine, there being no particular or special manifestations beyond the single fact of pain, varying in its intensity and in its locality. More commonly, however, the term neuralgia is used by our patients in layman's parlance, and signifies almost any pain resulting, and as such recognised by the sufferer to proceed from odontalgia, the seat of the lesion lying in one or more teeth. In the *first* instance the lesion may be equally as surely located in the *teeth*, but the inability upon the part of the patient to distinguish the fact is dependent upon what is familiarly known as *reflex action*; the lesion is in the tooth or teeth, and as such is conveyed to the brain or mental perception, but in the return the circuit is, as it were, ruptured, and at this point of rupture, where the sensation of suffering may be ultimately distributed in various directions, the illusion begins and the patient is satisfied that the teeth have no connection whatever with the agony. In the second case the patient usually comes within our jurisdiction for the purpose of having one or more teeth extracted, which local indications make it evident are the seat of the lesion; while in still others the persistent assertion of the sufferer would lead us to infer that a perfectly sound tooth in either jaw was the offender, yet we ultimately convince both the patient and ourselves that the proper tooth for treatment is a more or less diseased one in the opposite maxilla: this again is the result of reflex action, and in these cases it becomes us, as reliable practitioners, to form our diagnosis in the most careful and painstaking manner, to the end that the results of our treatment may corroborate our assertions, and that we make no error which would justify the charge of mal-

practice. However, when an instance of facial neuralgia presents to us for treatment, our first duty is an endeavour to form a proper diagnosis, searching for the cause among and in connection with the sufferer's teeth, and just here it may not be amiss for me to assert my strong belief that *all* instances of *bonâ fide* facial neuralgia originate in connection with the teeth. I freely admit that in many cases such origin is an exceedingly difficult matter to trace to a satisfactory diagnosis; but to say to such a patient that they have neuralgia (I fear too often the scapegoat of puzzled examiners), and to dose them with nervines, trusting that chance may give them relief, is to give them no satisfaction whatever; every effect must have its cause, and our first attempt should be to trace that cause, if it be practicable, and when found to remove it. In many instances a correct diagnosis is readily formed, the local indications rendering the examination really very simple, while in numerous other cases the effort to discover the origin of the suffering is an exhaustive and anxious one; while in others, though fortunately but rarely, repeated trials are at last merged in utter discouragement and finally abandoned. It is now my design to occupy the remainder of this paper with illustrations of some of the exciting causes of facial neuralgia, together with the special treatment necessary for the reduction of the lesion; such treatment it will be my earnest endeavour to render intensely practical, and such as I have personally found to have produced the best results, to the end that what is written may in its humble way accomplish whatever good its limited capacity will permit. Avoiding glittering generalities, and shunning the repetition of numerous technical terms, which serve only to confuse and not instruct the general reader, but which are too frequently indulged in in magazine articles, I will at once proceed to the discussion of what may properly be termed the pathology of the teeth as connected with the lesions of facial neuralgia.

The term pathology, in contradistinction to that of physiology, indicative of health, is applied to those conditions which are morbid in their character, hence it is to the diseases of the teeth and their remedies that I ask the attention of the reader for a short period—a subject, strange to relate, which, in its distinctive character, has had but a comparatively small space allotted to it in the dental litera-

ture of the present day; but notwithstanding this fact, it would be marvellous to my mind could a discussion be devised laden with a more profound interest to us in our specialty, or of more practical importance to the community at large. It is my firm conviction that by a closer and more thorough consideration of it by the general profession than is now frequent, will follow a stride markedly significant towards that advancement and elevation of our specialty so earnestly desired by us all. The practice is extremely surgical in its nature, and one which will be a most worthy aspirant to share those honours which will ultimately give substance to that future truly-professional specialty—oral surgery. These diseases of the teeth we should at all times be ready to combat with all the science and skill at our disposal—a struggle of no contemptuous order it will prove to be upon many an occasion with not a few, but one which in the *great majority* of instances will eventually yield to persevering energy and the judicious use of remedial agents properly applied. For the sake of conciseness in the arrangement of those diseases which I propose to deal with in this paper, I will first designate the lesion, and then follow with a *résumé* of the proper steps to be observed in its individual diagnosis, together with the therapeutic agencies most frequently and successfully used by me in my own practice for its reduction. As an apology for having resorted to my individual practice in this respect, entirely ignoring any information which might have been derived from the text-books, let me say that I have done so, not actuated by any spirit of egotism, but simply in order that the possible grain of wheat which may, peradventure, exist in this article, should have a thoroughly practical signification and value.—*Johnson's Dental Miscellany.*

(*To be continued.*)

The "Lancet" on Dental Anæsthetics and "Dental Surgeons."

The explosion of feeling and remonstrance which has been produced by our remarks on this subject on the 27th ult. could not have occurred unless a formidable quantity of explosive material had existed in a condition to be easily fired by any casual spark that chanced to fall upon it. So much kinetic force implies the previous existence of at least

an equivalent of potential energy. Our correspondents on either side need to be reminded of two series of facts—the one relating to the history of the present controversy, the other to our consistent policy as an organ of medical opinion with regard to the specialty of dental surgery and the position of those by whom it is and ought to be practised. We will not dwell on the first topic, as those of our readers who care to understand the occasion of our remarks on the 27th ult. may find the key to all we said, and can scarcely place an erroneous construction on the argument, if they will refer to the letter of Dr. Burney Yeo, which appeared on the 29th of April last, and which, apparently, some of our enthusiastic critics have not read. Dr. Yeo's case, or, at least, his complaint, clearly related to the use of anaesthetics by unqualified persons practising dentistry. We condemned this, and we went further. We objected to the practice of "anaesthetists" administering "the gas" for unqualified dentists as unadvisable on many grounds. Dr. Burney Yeo referred to the "Association of Surgeons practising Dental Surgery," and we repeated what we had said on many previous occasions, as to the wisdom of starting and the duty of supporting this new society on grounds ethical and prudential. We did not allude to the qualification in dentistry granted by the College of Surgeons in our remarks; as a matter of fact we had not that qualification in view. Our attitude with regard to the special diploma is unchanged. Twenty years ago we expressed an opinion that some such qualification was desirable, and the College of Surgeons was a fitting body to give it. We think so still. We made another observation twenty years ago which it may be worth while to recall. There were fears, when this special licence was instituted, that its holders, not being also members of the College, would feel themselves aggrieved by not being placed on an equality with surgeons. We endeavoured to show that while this inferiority of the L.D.S. must undoubtedly exist, it would be simply honest to acknowledge it, and vanity to strive for equality. It is strictly in accordance with this opinion that we warmly approve the combination of those who are surgeons first and dentists afterwards. We think now, as we thought in 1865, that it is well such a qualification should exist, but, like the midwifery licence, it should be taken after the membership. We do not say that none except members of the College of

Surgeons ought to practise dentistry, but only those who are medically qualified can treat a case of tooth disease all through. It is, in fact, much easier to understand an isolated specialty relating to the eye or the ear than to the teeth. No part of the organism is more sensitive, more intimately connected with the general system, or so commonly affected sympathetically with other organs. It is almost impossible to conceive of an independent treatment of tooth disease. All reforms are progressive. At one time bone-setting was a specialty, and the bone-setters and barber-bleeders were opposed to the movement which first introduced educated men into their craft, and then raised it to the dignity of an art culminating in a science. This is what time is doing for dentistry. The unqualified experts must not complain if they are crowded out, or the educated and diplomated dentists if they are gently persuaded to join the profession under whose college they now hold a special, and subordinate, because limited, licence.

Hospital Reports.

"PERMANENT CLOSURE OF THE JAWS."

The treatment of permanent closure of the jaws from contracted cicatrices, necrosis, ankylosis, and other causes, has not received very much attention from surgeons generally. As such cases are not of very unfrequent occurrence, it will be interesting, no doubt, to some of our readers if we refer briefly to the treatment of those who are the unfortunate victims of this pitiable condition.

There have been two operations proposed and practised. Professor Rizzoli, of Bologna, conceived the idea of simply dividing the jaw; he made no external incision whatever, but completed the section of the bone from the mouth by means of powerful forceps. In this way he operated upon four patients; and at a later date M. Verneuil reported other cases which had also been operated upon in the manner suggested by Rizzoli.

Professor Esmarch's operation consisted in removing a piece of bone from in front of the contracted cicatrix, so as to establish a false joint anterior to the cause of occlusion. It necessitates an external incision, which, however, is a

matter of no real importance, whilst it permits the use of the saw instead of the forceps for the purpose of dividing the bone, and thus does away with the risk of splintering. Dieffenbach had previously recommended nearly the same operation, and had tried it, but without any good result, as he endeavoured to make the false joint behind the contraction instead of in front of it. There is a third procedure, which has been adopted by Mr. Barnard Holt and Mr. Heath, in cases where cicatrices have existed on each side of the mouth. It consists in the division of the cicatrices from within the mouth, and then keeping the surfaces apart by means of shields properly adjusted to the teeth. These shields require to be constantly modified. The treatment is prolonged and tedious, whilst the operation is difficult and bloody; and the patient ought to be of an age at which he can give assistance to the surgeon and dentist. Although in both Mr. Holt's and Mr. Heath's cases what were considered satisfactory results were obtained, this treatment is not one which is likely to be often followed, owing to the trouble it entails both upon the patient and the surgeon.

The operation which, on the whole, has proved most successful, and which is most frequently resorted to, is Esmarch's. It was first performed in this country by Mr. Mitchell Henry, M.P., when that gentleman was a member of the surgical staff of the Middlesex Hospital; subsequently Mr. Christopher Heath operated upon two cases with success.

We have now an opportunity of publishing the notes of four recent cases, three of which have occurred in London Hospitals, and one at the Hotel-Dieu, Paris. For the particulars of the last-named case we are indebted to Dr. Charnley, late Clinical Assistant of the Middlesex Hospital.

The London cases were of similar origin: two had followed on scarlatina, and one after measles. The Paris case comes under another category altogether: its exciting cause was a decayed tooth. Mr. Mac Cormac's and Mr. Lawson's patients had each suffered from necrosis of the jaw as well as sloughing of the cheek; in the former there was a bony lamella between the upper and lower jaws. Mr. Lawson had tried a milder treatment on his patient eighteen months before she was submitted to Esmarch's operation. It will be noticed that in his case eleven months have elapsed since the operation, and that, though for some length of

time afterwards the result was perfectly satisfactory, quite recent reports prove that no great permanent good has been effected. In Mr. Mason's case—and, it is to be inferred, in M. Richet's also—there was firm ankylosis of the joint on one side, but there had been no sloughing of the cheek, and no adhesion between the cheek and gums. The permanent result in their cases may possibly, therefore, prove more favourable. The three English surgeons removed a wedge of bone from the lower jaw. M. Richet seems simply to have divided the bone. The only course which seems likely to be followed by lasting success in cases of necrosis and sloughing is to remove a considerable piece, and better still, perhaps, the whole side of the lower jaw from the joint to just in front of the cicatrices.

Those who care to know more about this subject cannot do better than consult Mr. C. Heath's book on 'Injuries and Diseases of the Jaws,' or Esmarch's monograph.

ST. THOMAS'S HOSPITAL.

FIXATION OF LOWER JAW FROM SLOUGHING OF CHEEK AND NECROSIS OF JAW FOLLOWING SCARLET FEVER—FORMATION OF ARTIFICIAL JOINT BY REMOVAL OF A PIECE OF THE LOWER JAW.

(Under the care of Mr. MAC CORMAC.)

Jane D., aged seventeen, had an attack of scarlet fever when four years old. Her health was much impaired, and necrosis of the lower jaw, abscesses, sloughing, and ulceration of cheek followed, apparently as sequelæ of the attack. The cheek became adherent to the maxillæ, and the buccal pouch was completely obliterated, and so long as she can recollect she has been unable to open her mouth. She states that on two occasions in another London hospital the cheek was extensively separated by dissection from the jaws, and for a time some movement was the result; but after a short space the immobility was as great as previously.

On admission to St. Thomas's Hospital, under Mr. Mac Cormac's care, March 14, 1876, her condition was pitiable: the lower jaw was fast fixed against the upper, so much so that the incisor teeth actually overlapped. There was, on careful examination, a slight amount of lateral motion observed. She could readily swallow fluid food, but any solid nourishment could only be introduced into the mouth by a process of rubbing or "grating" the morsel against the

teeth, when some portion would pass through the interstices. She suffered much from tooth-ache. The left cheek was throughout adherent as far as the angle of the mouth, which was deformed by the cicatrices due to the former loss of substance.

Mr. Mac Cormac decided to perform Esmarch's operation for the formation of a false joint, believing the absence of mobility to depend on the cicatricial contraction in the cheek, and that if the jaw were divided in front of this, the mandibular joint on the uninjured side would be free to act, and the patient be placed in a condition of comparative comfort.

Accordingly, a free incision was made horizontally through the cheek, from the angle of the mouth to the anterior border of the masseter, and another down to the ramus of the jaw from the middle of the first incision. In this way the region involved was freely exposed, but some embarrassment occurred by reason of no interval being found between the jaws, and it was only then discovered that a thin lamella of new bone extended from the upper to the lower jaw.

A hole was made in this with the gouge, and a chain-saw passed around the bone, which was readily divided opposite the second præmolar. Then a piece of the jaw in front of this was excised, partly by means of the saw, and partly with cutting forceps, as far forwards as the canine tooth—a piece of quite half-an-inch in breadth being removed. The left half of the jaw became now freely movable, and could be opened quite widely. A considerable number of decayed teeth were then extracted (amongst them the molars), which had been pressed into a position at right angles to their normal direction. Some bleeding from the divided bone was checked by the application of perchloride of iron, and the wound united carefully by sutures—a piece of the lower lip, which was much larger than the upper, being turned up to form a new angle to the mouth. This facilitated the healing, and improved the girl's appearance considerably. Three days later all the sutures had been removed, and the wound was healed by first intention except at one point. The progress to recovery of the patient after the operation was uninterrupted. She soon became able to eat solid food, and she can now masticate with ease and comfort. After eight weeks, during the greater

part of which she simply remained in hospital to be under observation, she was sent to a convalescent home, having an excellent use and free movement of the left two-thirds of the lower jaw.

ANCHYLOSIS OF RIGHT TEMPORO-MAXILLARY ARTICULATION—
ESMARCH'S OPERATION—GOOD RESULT.

(Under the care of Mr. FRANCIS MASON.)

The patient was a young woman, aged twenty-nine, who was admitted into St. Thomas's Hospital, under Mr. Mason's care, June 8, 1875. She stated that she was quite well until thirteen years previous to admission, when she had an attack of scarlatina. Abscesses formed in various parts of the body, and amongst others in the right temporo-maxillary region. She was also confined to her bed for two years with dropsy. Her recovery then became complete, with the exception that her lower jaw remained fixed.

At the time of admission the patient was in fair health, but had an anxious expression of countenance. Close to the temporo-maxillary joint of the right side there was a cicatrix, and the joint itself seemed somewhat thickened. The teeth of the upper and lower jaw were quite close together, and it was impossible to insert even a piece of writing-paper between them; there was just a perceptible movement, but that was all. She took her food (finely minced) through an aperture occasioned by the loss of the crown of the left lower canine tooth.

On June 30 ether was administered, and Mr. Mason tried to separate the jaws with gags of various shapes; but beyond displacing several teeth, made no impression whatever on the joint itself. Mr. Mason then proceeded to make a horizontal incision, nearly two inches in length, in the soft parts under the body of the jaw of the right side, and, reaching the bone, separated the soft tissues and got into the mouth between the teeth and cheek. The incision commenced at a point under the chin, about opposite the angle of the mouth, and extended backwards nearly to the masseter muscle, without involving the facial artery. A narrow saw was now applied vertically in the space between the first and second bicuspid teeth, and the bone divided with the help of the cutting forceps. After this section the left side of the jaw was found to be freely movable, but the right side was firmly fixed. Mr. Mason

then removed with the saw about half-an-inch from the right or anchylosed side. There was no hæmorrhage worthy of remark, and the wound was closed with silk sutures. The sequel of the case may be told in a few words. The day following the operation she was able to open the jaw herself, without assistance, for about three-quarters of an inch, and on July 10 could open it nearly an inch.

On the 12th the wound in the skin had all but healed, and the opinions of Mr. Elliott and Mr. Ranger, the surgeon-dentists to the hospital, were taken as to her wearing some small apparatus to keep the jaw in good position. Unluckily, however, the patient got an attack of erysipelas, and thus the local treatment was necessarily suspended for awhile. When she had recovered from the erysipelas, she expressed a wish to leave the hospital, and there was difficulty in inducing her to remain.

On August 4, Mr. Mason being desirous of ascertaining the exact amount of movement, had her placed under the influence of ether, and found that the left temporo-maxillary joint was fairly free, and that the jaws could be separated to the extent of three-quarters of an inch. The right joint was quite firmly anchylosed. The left side of the jaw was tilted a little over to the opposite side, yet she could masticate her food well. Any mechanical apparatus appeared to be of doubtful value, and the idea of adopting it was abandoned. She left the hospital sooner than Mr. Mason wished; but altogether, considering the drawback of the attack of erysipelas, the result was better than could have been anticipated. It may be added that the teeth which were unavoidably displaced by the gags, in attempting to open the jaws previously to the division of the bone, were returned to their sockets, and became as firmly fixed as ever.

MIDDLESEX HOSPITAL.

COMPLETE CLOSURE OF THE LOWER MAXILLA FROM A DENSE CICATRIX WITHIN THE MOUTH—REMOVAL OF A WEDGE OF THE LOWER MAXILLA.

(Under the care of Mr. LAWSON.)

Emily H., aged ten, was admitted into Regent ward in January, 1874, on account of a complete closure of the jaws, caused by a dense cicatrix within the mouth, which firmly tied the cheek to the upper and lower maxillæ of

the left sides, and bound the lower and upper maxillæ so closely together that the mouth could not be opened to the smallest degree. The history of the patient was as follows:—When four years old she had measles, and afterwards suffered severely from boils. She then had sores within the mouth, and apparently an attack of cancrum oris, which produced sloughing of the mucous membrane of the cheek and of the corresponding portion of the lower maxilla, with some exfoliation of bone. From this the child recovered, but, in the cicatrisation which followed, the cheek became firmly adherent to the upper and lower maxillæ, causing a closure of the mouth. The child was fed with chopped and sopped food, which was pushed through the spaces of the teeth. When second dentition commenced she enjoyed a period of comparative comfort, as, from the increased size of the spaces caused by the loss of the first teeth, she was able to push the food more readily into her mouth; but when the new teeth had filled up the gaps the inconvenience became so great that her mother brought her to the hospital for relief.

In January, 1874, she was first admitted into the Middlesex Hospital, and Mr. Lawson freely divided the whole of the cicatrices within the mouth, completely detaching the cheek from the upper and lower maxillæ. The jaws could then be opened with ease. The relief, however, was very transient, for as cicatrisation proceeded the tendency to close again was very great, and it was only by the ingenuity of Mr. Bruce, Mr. Lawson's dresser, that fixity of the jaws was prevented. He made a series of compressed dried pine-wood wedges, which were introduced between the teeth, and these swelling kept the jaws apart. They were always worn except while eating. The wound healed, and the patient when she left the hospital could open her mouth sufficiently wide to eat her food. She was to continue the use of the wedges. About nine or ten weeks after leaving the hospital the use of the wood wedges became so painful, owing to the great contraction of the cicatrices, that she was obliged to give them up, and very shortly afterwards the mouth was as firmly closed as before the operation.

On July 2, 1875.—The patient was again admitted into the hospital, with both jaws firmly bound together. She could not separate the lower maxilla from the upper to the smallest degree.

14th.—Ether having been administered, Mr. Lawson made an incision along the lower border of the lower maxilla, commencing at the point where the cicatrix terminated, and removed with a small saw a wedge of bone immediately anterior to the cicatrix, about half an inch long in the upper, and three-quarters of an inch long in the lower portion. The wound was then closed with a suture. After this operation the patient gained immediate relief, and was able to open the mouth on the right side sufficiently wide to admit a sixpence placed edgewise between the teeth.

August 3.—The patient left the hospital with the wound healed, and much pleased with the result.

The benefit, however, has been only transient, for on making inquiries recently concerning the child, Mr. Lawson was informed that the jaws are again closed as completely as before.

Mr. Lawson remarked that after the experience of this case, should a similar one again come under his care, he should pursue a somewhat different course. He would remove a longer wedge of bone anterior to the cicatrix, and then call in the aid of the dentist to make a plate to fit the inside of the teeth, so as to keep the divided ends of the jaw apart during the process of cicatrisation. The plate should be afterwards provided with a central hinge, which would allow of an up-and-down movement, to admit of mastication, and should be worn by the patient until a false joint was completely established.

HOTEL-DIEU, PARIS.

DECAYED WISDOM-TOOTH—FIXATION OF JAW—FORMATION OF ARTIFICIAL JOINT BY DIVISION OF LOWER JAW—REMOVAL OF TOOTH BY GOUGING.

(Under the care of M. RICHET.)

February 8, 1876.—A man, aged thirty, presented himself with the following story:—A few months before he had tooth-ache in the lower wisdom-tooth of the left side. He went to a dentist, who tried to remove the tooth, but, after pulling his jaw about a good deal, failed. He is now unable to separate his jaws and therefore unable to eat, and is in consequence much emaciated. The jaws are so closely approximated that a fine chisel can with difficulty be introduced. There is a swelling on the left side over the lower

half of the masseter, and this muscle can be felt tightly contracted. M. Richet raised a square flap over the position of insertion of the masseter, and separated this muscle from the bone. The patient could then open his mouth a little more than before, but not wide enough to be of much use. The jaw was therefore divided by a chain-saw just behind the position of the wisdom-tooth. After this was done the patient was able to open his mouth freely. After the division of the jaw, by means of a little exploratory gouging, the remains of the wisdom-tooth were found.

18th.—Patient progressing favourably. He can open his mouth four-fifths of an inch. To employ active and passive movement daily.

19th.—He can eat bread and meat, and walks about the ward. His general health is good. The discharge from the wound escapes externally.

CASE OF CLEFT HARD AND SOFT PALATE, OPERATED ON BY
LANGENBECK'S METHOD; RESULT PERFECT.

By GEORGE BUCHANAN, M.A., M.D.,

Professor of Clinical Surgery, University of Glasgow.

David S——, aged twenty-two, was admitted to the Western Infirmary, Nov. 26th, 1875. There was a congenital cleft in the palate involving the whole of the soft and half of the hard palate. The anterior end of the fissure was quite rounded, and the margins of cleft in the hard palate were three-quarters of an inch apart. The tips of the bifid uvula were drawn asunder by the palatine muscles.

The operation was performed after the method introduced by Langenbeck, closure of the hard and soft palate being accomplished simultaneously. The patient, not being put under the influence of chloroform, was able to give great assistance, by holding his head at a proper angle and occasionally stopping to rest and wash his mouth. From the help of the patient the proceedings were much more rapid and satisfactory than usual.

I first carefully made raw the entire edges of the gap by cutting off a thin slice of tissue from the hard palate, to the tips of the uvula, on both sides, taking care that the raw edge was continuous throughout. I then made an incision down to the bone, in the roof of the mouth, close within

the alveolar process, extending from the hamular process, forward to near the incisive foramen. Then with a blunt periosteal elevator of a hooked form I stripped the soft tissues, including the periosteum, from the palate processes of the maxillary and palate bones, and the flap so separated hung down like a curtain from the roof of the mouth, but of course supported by its attachment in front and behind. This was done on each side. The posterior part of the cleft, however, still remained too far apart to allow of approximation without considerable tension, so I relieved this by making incisions through the soft palate on each side, as in Dieffenbach's operation. The edges of the cleft could now be drawn together throughout the whole extent. Six silk threads were introduced by the ingenious method introduced by Sir William Fergusson, and finally by these, fine silver wires were drawn through and tied. At the end of the operation the gap was seen to be closed throughout in a most satisfactory manner.

On the eighth day the silver sutures were removed, and the edges found to be firmly adherent.

The patient was kept in the hospital for some time longer in order to see that the granulation of the side wounds should not reopen the cleft.

Two months after the operation the palate was firmly closed throughout its whole extent. Already patient felt the difference in swallowing, and the improvement in his articulation was manifest. In fact, when he paid proper attention, he could speak in such a way that his former deficiency was scarcely recognisable, and there is no doubt that by a little practice he will still further improve.

The operation, so far as regards the union of the cleft and the result, both on swallowing and speech, is the most successful in my experience, and leaves little to be desired.

Medical Times and Gazette.

Glasgow.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Judging from the aspect of the dental horizon that history is about to repeat itself, I think that

perhaps the following statement may be scanned with advantage by those contemplating any advantage to the profession at large. We do not seem to have reached the haven of bliss so energetically prophesied when the College of Surgeons kindly added us to their tail. As many younger men have entered the profession since the first movement took place, they are perhaps unacquainted with works that occurred before their professional time, and which I think we may safely say from extended experience would have produced good results to the profession as a body, had such movement have been allowed to perfect itself. Commencing as it did upon a right basis, which will sooner or later recommend itself to the thoughtful, the twenty years partially lost will not be entirely so if the pitfalls of the past be avoided in the future, and the benefit of the profession be the aim of those who are now agitating for a better state of affairs as regards the position of the dentist.

Some twenty years having elapsed since the first attempt was made to advance the status of the dental profession, it will be as well to mark what progress (if any) has been made. In the year 1856 it was thought by several practitioners that the time had come to bring dentistry out of the slough of despond it was in, and make it truly a science and an art, and for that purpose they took counsel together as to the best means of accomplishing so desirable an end. Twelve months previously the first germ of this movement had been thought over and made public, but not till August, 1856, did it assume any definite form. It will be unnecessary to follow this movement through all its stages, suffice it to say that the College of Dentists came into existence. It was soon discovered that some few practitioners had memorialised the Council of the College of Surgeons praying them to grant an examination in dental surgery, presuming that by such means they would also improve the position of the dentist. At the present time we are able to judge if the profession as a body has become the happy family it was prognosticated from such measures twenty years since.

That no improvement in the education of dentists has taken place it would be wrong to assert, but that any steps have been gained for the body politic is answered by the late meetings public and private, and certainly is nowhere manifest, for we have our letter boxes filled with literature

of the cheap and nasty class as heretofore, and our papers teem with fulsome and discreditable paragraphs in the midst of the news of the day, artfully arranged out of the usual columns for advertisements, to which no check can be given. Their authors drive about the town laughing at their more earnest brethren, and one is constantly asked, what advantage does the dental certificate give you? and you can only reply that it admits you to the library at Lincoln's-inn-fields, and then only if a modern one.

As there are so many Richmonds in the field we must hope one of them will prove the Simon Pure, and will be able to extract out of chaos a something that will place dentistry on a firm basis, that will eliminate the charlatan and quack from its ranks, and let pride and vainglory give way to harmony and peace, and then, but not till then, will the profession of dentistry rank with allied professions and attain a status all well-wishers would desire. As it is possible that it is not known what a few earnest men did some few years since, I append a list of their efforts to advance the profession. They first arranged a course of lectures on descriptive anatomy of the head and face, followed by courses on the skeleton, on the principles of dental surgery, on bone, enamel and the metals, on histology, on the medical history and treatment of diseases of the teeth and adjacent structures, on the surgery of the mouth and jaws, on the structure and development of the teeth, on anæsthesia and anæsthetics, on calcification of the dental pulp, on diseases of the periosteum, also courses on the salivary glands and saliva, and dental materia medica. When we consider that several of these courses were long ones, that they were all by the best procurable men, that they were the first to establish a school for the younger men, and gave several medals to the most successful students, and by many other means too numerous to mention, tried to disseminate knowledge so that all the ranks might eventually show a compact and educated mass, they deserve our thanks, and the means they adopted, if persevered in, might by this time have produced a better state of things both individually and collectively than now appears to exist, and if those now working do not wish to see twenty more years wasted, they will adopt for their motto

MEASURES NOT MEN.

Dental Anæsthetics and Heart Disease.

TO THE EDITOR OF "THE LANCET."

SIR,—In reading Dr. Burney Yeo's interesting case of nitrous oxide gas being administered when serious heart disease existed, the following suggests itself to me, viz. :—That nitrous oxide gas acts as a stimulant to the heart's action as well as an anæsthetic, also, from the large quantity of oxygen in its composition, facilitating the elimination of carbon by the lungs during anæsthesia; chloroform and ether, from containing much carbon, having an opposite tendency. The patient mentioned would most likely have died under either of the latter anæsthetics.

Yours obediently,

May, 1876.

AN OBSERVER.

TO THE EDITOR OF "THE LANCET."

SIR,—I believe that my colleague, Mr. Hamilton Cartwright, has correctly explained the *modus operandi* of nitrous oxide gas and the nature of the risk incurred by a patient who has a fat and flabby heart. With your permission I will add a few words to Mr. Cartwright's account of the phenomena attending the inhalation of the gas.

In most cases, during the first few seconds the pulse and the breathing are quickened, as a result, probably, of emotional excitement. In the next stage the breathing becomes slow and shallow, and the pulse full and firm. Then, after a period which varies in different cases from forty to eighty or ninety seconds, the pulse suddenly becomes almost, or even quite, imperceptible, the features become livid, the pupils are widely dilated, there is a state of general muscular rigidity; in short, all the phenomena of the first stage of an epileptic fit are present. The mouth-piece being removed, the morbid phenomena quickly pass away, the features regain their normal colour, the pulse returns, and for a few seconds has again a full and throbbing character.

The explanation of the phenomena appears to be sufficiently obvious. The nitrous oxide rapidly replaces the oxygen in the lungs and in the blood, black unoxygenised blood passes into the systemic arteries and excites, through the vaso-motor nerves and centre, contraction of the muscular arterioles. The resistance thus offered to the passage of unaerated blood through the terminal arteries explains the temporary fulness and tension of the radial pulse. The unoxygenised blood, passing through the systemic capillaries without the usual interchange of materials between it and the tissues, returns to the lungs in an abnormal condition, and there excites contraction of the pulmonary muscular arterioles. The resistance thus offered to the passage of blood through the lungs explains, on the one side, the systemic arterial emptiness with feebleness or even complete disappearance of the pulse, and, on the other, the systemic venous fulness with lividity of the skin. The epileptiform condition is explained by the sudden and extreme diminution of the blood-supply to the brain, the blood at the same time being unaerated.

In an animal killed by the continued inhalation of the gas, as I have recently ascertained by experiments on rabbits, performed in conjunction with Mr. Cartwright, the right cavities of the heart and the systemic veins are distended by black blood, while the left cavities and

the systemic arteries are comparatively empty and flaccid, the blood on both sides of the heart being equally black. Now it is evident that if the muscular walls of the right cavities of the heart are thin and flabby or in a state of fatty degeneration, the distension to which they are subjected in the advanced stage of nitrous oxide inhalation may result in a suddenly fatal suspension of their contractile power, or, short of that, in a weakening of their muscular fibres (analogous to the paralysis which results from over-distension of the urinary bladder), which may manifest itself in a feebleness and irregularity of the circulation, continuing for an indefinite period, and attended with many distressing symptoms.

Mr. Braine, in his letter to you, says of nitrous oxide and ether, that they "add to the force of the heart's action, and stimulate it." With regard to nitrous oxide, I believe this to be an error. The temporary fulness and firmness of the pulse may have suggested this erroneous theory; but I have before given what is unquestionably the true explanation of that phenomenon. No one who has studied the phenomena of nitrous oxide anaesthesia can think without a shudder of the reckless administration of the gas by men ignorant of the physiology of the circulation, and wanting the medical knowledge and experience required to detect the physical conditions which in a given case would render the use of this agent more than usually hazardous.

It cannot be too constantly borne in mind by those who administer nitrous oxide gas that the two main sources of risk are—first, an impeded circulation through the lungs, such as may result from advanced vesicular emphysema; and secondly, weakness of the walls of the *right* cavities of the heart.

I am, Sir, your obedient servant,

Savile-row, May 11th.

GEORGE JOHNSON.

TO THE EDITOR OF "THE LANCET."

SIR,—I think the explanation of the action of laughing gas, lately put forth by Dr. George Johnson, ought not to be accepted without further consideration.

In effect he says: 1st. That the fuller and tense pulse, noticed at the commencement of inhaling it, is produced by contraction of the systemic arterioles, and not by the heart being stimulated to unusual contraction. 2nd. That the cause of the reduction and final cessation of the radial pulse, at a later period, is the want of blood being supplied to the left heart resulting from contraction of the pulmonary arterioles. 3rd. That from the same contraction the right heart, being unable to drive the blood onward, is liable to be stretched or over-distended, and to lose its contractile power, like an over-distended bladder.

These hypotheses are unsatisfactory to me.

1st. Because I have put to sleep more than eleven thousand persons with laughing gas without meeting with any case showing signs or symptoms of the heart being dilated by the process; and, although I have not refused to give gas to any one able to walk upstairs without distress in breathing, I have not had a fatal case. Moreover, I don't know that any death has occurred from laughing gas in England, unless the Exeter case be claimed for one.

2nd. If the increased fulness of the pulse is produced by contraction of the systemic arterioles, how is it that we do not see any paleness of the skin produced at the same time? What is observed is a gradual deepening of colour, without any temporary pallidity.

3rd. Respecting the contraction of the pulmonary arterioles, the fact that the pulse keeps up long after the blood has become dark, and after consciousness has been abolished, and, usually, even after the breathing becomes intermittent, seems to show that there can, at this stage, be little difficulty in the passage of blood through the lungs. When at length the pulse becomes small and ceases, we need suppose no more, in order to account for it, than that for want of oxygen in the blood the heart's function ceases, as that of the brain had previously done. It may be that the right heart becomes ineffective before the left; it may be, too, that there is some obstruction in the lungs. In the latter case, however, there would be no risk of distension of the right heart, for by this time its contractile power has almost gone. Even if the blood flows back through imperfect valves into the right ventricle, it cannot flow back with greater force than that which sent it forward.

Yours faithfully,

Cavendish-place, May 30th, 1876.

J. T. CLOVER.

The Profession of Dental Surgery.

TO THE EDITOR OF "THE LANCET."

SIR,—It is a matter of surprise and regret to those gentlemen who have been instrumental in forming the Association of Surgeons practising Dental Surgery to find their unquestionable right to form a new society give rise to so much ill-feeling, especially as such cogent reasons exist for its formation.

1st. There are many points in our specialty—ethical and educational—which require amendment, whilst there is a necessity for a society in which those who have high professional views should have an opportunity of discussion.

2nd. The Odontological Society, by its constitution, is not calculated to fulfil the objects of the new Association, whilst, moreover, up to the present moment, it persistently refuses to amend its laws in relation to the admission of not only *wholly* unqualified practitioners (all of whom, if conducting their practices respectably, might have obtained the L.D.S. certificate upon nominal conditions), but even of those whose sole claim to admission is abstention from advertising for a short period.

3rd. Many whose opinions are entitled to respect consider that the present education of dental practitioners is insufficient, considering the many innovations which have taken place in modern practice, and hold that the special dental, like any other similar certificate, should only be accessory to the full degree of the College of Surgeons.

Finally, the assumption of your correspondents that the members of the Association assume themselves to be a representative body is incorrect and unfounded, their sole object being to bring together a body of gentlemen with kindred sympathies to discuss scientific subjects in common with their medical *confrères*, and to advance professional education. Moreover, your correspondents seem to have misinterpreted

your recent article entirely, which was a fair and independent criticism, evidently aimed at those uneducated and unqualified persons who so disgrace the fair name of our specialty in the estimation of a public who are too often unable to distinguish between educated practitioners and ignorant charlatans. I am certain that none of those with whom I am associated would deny that the dental licentiateship has done service in its time, or would wish to cast a slur upon the many respectable owners of that certificate, but its institution twenty years ago, when for the most part the dentist held no qualification, cannot surely be a proof that further educational progress is unnecessary. All reform is for the future, and cannot be effected without interfering, to some extent, with existing interests. It is difficult to understand how any educated men can oppose a movement which has for its sole object the advancement of their profession, while several of those who have signed the so-termed protest have already expressed their sympathy with our views. It is impossible to see that a number of surgeons practising a specialty, in the ranks of which are many unqualified men, are pursuing other than a consistent course in associating together with the object of discussing those principles which pertain to their views of professional advancement, which they feel will be best attained, not by monopolies in special education and by attempts to dissuade men from aspiring to the highest educational standard, but by the recognition of their specialty, in common with other specialties concerned in the treatment of individual organs, as an integral part of the science and art of medicine.

I am, Sir, your obedient servant,
 GEORGE PARKINSON, M.R.C.S.

TO THE EDITOR OF "THE BRITISH MEDICAL JOURNAL."

SIR,—Mr. W. D. Napier, in your last number, writes to put on the key-stone of confutation to certain statements set forth by the adversaries of a society styled the Association of Surgeons practising Dental Surgery. In doing so, he announces by statistics the "entire success of the movement, as it embraces at least half the whole body of medically and surgically-qualified dental surgeons." The whole body of these gentlemen, as given in the *Medical Directory* for 1876, is not greater than 54. Of these, 25 signed a letter in the last week's number of a medical contemporary, disclaiming all connection with this new society. This disclaimer could not, for want of time, be signed by several other gentlemen, who would willingly have done so; but allowing the total signatures to be 25, that leaves 29 members from which to elect president, vice-president, treasurer, secretaries, and council, and but a small number to constitute the body of the society. It is quite legitimate for any section of society to band together for any social object that may take their fancy, but when they assume to themselves public functions they must expect to be publicly criticised; and the result of this short examination into the numbers of the new society need not excite very jubilant congratulations from the pens of its promoters.

I am, Sir, your obedient servant,

June 5th, 1876.

T. CHARTERS WHITE.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM JUNE 1ST TO JUNE 30TH, 1876.

Extractions.	Children under 14	-	-	-	-	402
	Adults	-	-	-	-	693
Under Nitrous Oxide	-	-	-	-	-	182
Gold Stoppings	-	-	-	-	-	178
White Foil ditto	-	-	-	-	-	23
Plastic ditto	-	-	-	-	-	263
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	10
Miscellaneous Cases	-	-	-	-	-	183
Advice Cases	-	-	-	-	-	128

Total - - 2062

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médical.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of MESSRS. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE
Monthly Review
 OF
DENTAL SURGERY.

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From

JOHN WOOLCOTT, Esq.,

Fellow of the Royal College of Surgeons, England,
FOUNDER OF THE KENT COUNTY OPHTHALMIC HOSPITAL.

"I enclose a cheque for your account, and I take this opportunity to testify concerning the excellent quality of your dry 'SPÉCIALITÉ' SHERRY. I have been a great sufferer with gout, and for a long time I have been in search of a light Sherry, free from acid, which I might take and feel that it was doing me good instead of harm, and such I have found your wine, and have recommended it extensively to my patients in consequence.

"Maitland House, Parade, Tunbridge Wells."

THE

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THE MONTHLY REVIEW OF DENTAL SURGERY.

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Leaders in the Dental Profession.—No. 1.

SAMUEL LEE RYMER.

Samuel Lee Rymer, the subject of our first notice, was born at Plymouth, on May the 5th, 1832. His early life was spent at St. Servan, in Brittany, where his father was English physician for several years. Returning to England in 1844, his father died the following year at Weston-super-Mare, and his mother removed to Cheltenham, where the usual educational course was pursued, after which, through the late Mr. Lemale, an introduction took place to Mr. W. Perkins (lately deceased), and Mr. Lee Rymer then became his pupil. It is needless to say that no better opportunity could well occur for his acquiring a knowledge of the mechanical department of the profession he had adopted. Surgical studies were pursued under Mr. Howse, at the Western General Dispensary, New-road, which, at that period—some twenty-six years ago—gave excellent opportunities for practice. As St. Mary's Hospital was not then open, the dental practice at the Dispensary was most extensive and well looked after, and such lectures as were advised by Mr. Howse were attended, and the best made of the educational advantages offered to ordinary students of those days. Having completed

his professional studies, Mr. Rymer commenced practice at Croydon at the early age of twenty-one, and has continued there ever since with great success, securing the respect of an extensive *clientèle*. In 1869 Mr. Joseph Steele became associated with him professionally—a step which has proved of great advantage, as the health of neither being very good they were able to relieve each other in the arduous work of a large practice. Mr. Lee Rymer is member of the Croydon Local Board of Health, honorary member of the Pennsylvania Association of Dental Surgeons—a thing to be really appreciated, as very few hon. members are elected by that body,—Treasurer of the National Dental Hospital, and Dental Surgeon to the Croydon Hospital. Some two years ago he was knocked back upon a train at Westminster Station of the Underground Railway, but by a providential presence of mind was enabled in a moment to grasp the handle of a carriage with one hand and obtain a footing on the next carriage, back towards the carriage, and was so carried through the tunnel to the next station. All who witnessed the occurrence at the commencement believed he must have been killed instantaneously. Although he suffered from the shock of this marvellous escape, he happily sustained no permanent injury. A somewhat impaired state of health and the anxieties of a large family compel him to lead at present a comparatively inactive life, but the record of his past labours as a reformer in the Dental profession fully justify his enjoying a season of repose.

Speaking of the origin of the College of Dentists of England, the editor of the first volume of their transactions says :—

One more step to the rear, and we find the determination to arouse the apathy of the profession, by convening an open meeting, engendered in the mind of a young practitioner, residing away from

the great theatre wherein the piece was to be performed, but engendered nevertheless with a full persuasion, that perseverance would prevail.

Thus we prove, that as in many other movements of a similar nature and design, *one* person simply deserves the credit of originating a scheme, the benefit of which will soon be felt in many directions. To Mr. Samuel Lee Rymer, of Croydon, then, is due the commendation of first *practically* introducing the idea of forming a Dental College in London. It is not asserted that Mr. Rymer first thought such a thing possible; as doubtless, many other worthy members of the profession had conceived the same notion, and it is well known, that in some crude form or other, most of those gentlemen who desire to adorn, rather than disgrace the profession, had hoped that the future would bring forth some institution or association, which might be made available for the perfecting of their acquirement, both in the surgical and mechanical departments. But "*factis non verbis*" appears to have been the motto which Mr. Rymer chose to adopt. Whilst other men contented themselves with thinking the matter over, or at most, putting their thoughts to paper, he dared the danger of defeat, and leaving off *thinking* and commencing *acting*, laid the foundation of this edifice at his own risk. Here then lies his praise: to this fact his name will ever be attached; and for this effort, he certainly deserves the thanks of every gentleman in the profession, who desires to see his chosen calling wrested from the gripe of the unprincipled and unqualified practitioner.

That Mr. Rymer had thought and pondered over the possibility of establishing an institution of this kind and calibre, may be gathered from the fact, that in August, 1855, he published his views on the necessity of reform, and laid down lines of conduct which he considered it advisable to pursue, in a letter addressed to the Editor of the *Lancet*.

That others, also, were of like opinions, may be proved by consulting the same journal for the ensuing month, as there may be found a letter from Mr. D. Mackenzie, entirely agreeing with the first writer. But it is very evident that these epistles did not produce results in harmony with the desires of the writers, for the surging wave of passing events threw nothing upon the shore which could be made available, and it was not until September, 1856, that we find anything tangible evolved. The *British Journal of Dental Science* contained in its second number (August, 1856) a letter from Mr. Rymer, in which he reiterated his views, and concluded by expressing his readiness to co-operate with his professional brethren in the formation of a Society of Dentists. The following number of the journal contained an advertisement, announcing Mr. Rymer's intention of calling a public meeting of the profession, on the 22nd of September, at the London Tavern, Bishopsgate-street, and asking for the attendance of such as sympathised with the contemplated projects.

The result of this advertisement was a copious correspondence on the subject, evincing a general desire that the object the advertiser had in view might be carried out, but in some instances (as was expected) depressing doubts and prophecies of ignominious failure, were by no means forgotten. Selecting the names of those who appeared most

energetic in the cause, Mr. Rymer requested their attendance at a preliminary meeting, to confer upon the most appropriate method of conducting the forthcoming assembly. This meeting was convened for Saturday, the 20th September, at the London Tavern; and those who answered to the summons were as follows:—Messrs. Perkins, Hockley, Hill, Brindley (Sheffield), Smith (Chatham), Bradshaw, Bate (Brighton), and Rymer.

Those gentlemen, then, who formed this little convention, had ample cause for congratulation; for although in itself unostentatious enough, it was *the first stone* in the high wall of isolation loosened and thrown down—the *germ* of brotherly feelings, which was destined in its growth to eradicate the ancient spirit of jealousy and distinction, which so highly coloured and completely pervaded the dental profession.

The experiment of testing the views of dental practitioners was now about to be performed; and the two short days which intervened were days of anxiety to the few more immediately concerned. At length the eventful Monday evening came; clad in wet garments, and with a look dismal enough to dispirit and becloud the hopes of men depending upon far more substantial and united patrons for support, than those who, now more anxiously than ever, awaited the result of the notice publicly advertised, of this their introductory meeting. The time wore on, and one by one (despite the wind and weather), the audience increased, until the room was *well filled*; some of those present having come very long distances, to testify in person to the necessity of professional reform and education. The gentlemen who had met on the previous Saturday had decided that three concise, yet comprehensive propositions, should be laid before the meeting. Several copies of these had been printed, but it was necessary to procure movers and seconders, and this Mr. Rymer succeeded in effecting, by making personal application to several parties present. At the hour announced, Mr. Alfred Carpenter, M.B., was proposed, and unanimously elected to fill the chair. This gentleman, in his address, explained that “he was not a dentist, but as a medical practitioner he took a lively interest in the movement;” and as an impartial person, no doubt the selection of a gentleman out of the profession (so to speak), was a judicious one, in the absence of a dentist of the highest standing.

Mr. Rymer (who was warmly received) explained the reason which induced him to undertake the responsibility of convening the meeting, and proceeded to show why it was important that a step like the present should be taken. The three resolutions were then passed; the tendency of which was, that—First, Reform in the profession was necessary. Second, That immediate steps should be taken to produce that reform; and, Third, That a Committee to consider the best means of carrying out these ideas should at once meet for that purpose.

The Provisional Committee elected, Mr. Rymer was requested to act in the capacity of Secretary. To this he assented, but stated, that as his time was much occupied and his health not strong, he should require the assistance of a colleague. Whether or not this observation was forgotten by the audience, it is not easy to say; but it is very *certain* that *no one* offered to share the difficulties and duties of this now

important post; and it is therefore but an act of simple justice to Mr. Hih, who has so assiduously maintained that position, to say, that he patiently waited until the assembly was about to disperse before he offered his services, which were most readily accepted by Mr. Rymer.

Certainly, the meeting was called at the instigation of a non-metropolitan member of the profession; but surely it could not be a matter of consequence *who* set the ball of reform in motion, so long as it *was* set in motion. Certain, again, that the convention had not been announced by sound of trumpet, but it was so announced, that a hundred out of those who came to know of it, assembled at the prescribed place and hour. An opportunity was then given for *any* member of the profession, gentle or simple, to be present; and those who either could not or would not come, must not grumble that things went on without them. Here was an open meeting, to *discuss merely* the best method of making the wretched state of affairs, which was acknowledged by all to exist, better. The projector of the meeting, like many more at that moment, knew only a few practitioners personally, and a few more by other means; and to these, invitations were sent that they might come and assist in the deliberations of the evening. As before mentioned, Mr. Thomas Bell was invited to preside, evincing, on the part of Mr. Rymer, a very laudable desire to have the benefit of that gentleman's matured judgment, to guide the opinions and resolutions which would be put forth on the occasion; unfortunately, however, for reasons of his own, the offer, as before stated, was declined.

Had any of the leading members of the profession appeared, there was all the opportunity that could be desired to mould the materials then in hand into another form; and certain beyond doubt it is, that Mr. Rymer would willingly have submitted to the *better* judgment of any of them who might have come forward; but as none of them did so, the parties then present combined to do for themselves what, if they chose, others might have done for them; and although stigmatised as "*democratic* (!)"—as the meeting has since been—that part of the profession, so comprehensive and vast, desiring alteration and improvement, will have no occasion to find fault with the materials employed to effect it.

Thus far, Mr. Rymer had acted in accordance with views he had entertained for some years; and the success which up to this point attended his effort, was a precursor of similar success in future; when having gathered others around him, that movement which he had set in motion, but *single-handed could not keep in motion*, should progress and develop itself, attended by the good wishes of every true friend to the dental profession. That mighty power—"THE SPIRIT OF THE AGE"—demanded *reform*; and as now shown, it did not ask in vain.

We could have no better testimony than this of the earnest and unselfish manner in which Mr. Rymer worked for his profession.

We can desire no other evidence of the continuance of that spirit than the perfect frankness and candour with which Mr. Rymer has since accepted the conditions made by his former opponents.

When the College of Dentists of England and the Odontological Society of London became amalgamated, it was mainly owing to the really statesmanlike skill shown by Mr. Rymer that such a combination became possible, and the loyalty with which he has adhered to the new order of things has never for a moment wavered. Though for many years he has taken no active part in Dental politics, his influence, if he were to exercise it, would be found much greater than is generally known; and for this very reason, in a great measure, we believe he has declined to enter afresh the arena of party strife. He desired to see the Dental profession making educational and social progress; and if a better or more acceptable way than the one he inaugurated could be found, he was too unselfish and single-minded of purpose to wish to offer any factious opposition.

Of his personal character we can say nothing. He is known and beloved by too many to need any word of ours. His whole life has been that of a true gentleman—without fear and without reproach.

The Month.

DENTAL EXAMINATION AT THE COLLEGE OF SURGEONS.

The following candidates passed the required examination and received the diploma in dental surgery, at the last meeting of the Board of Examiners held on the 29th ult. :—Messrs. G. W. Bateman, Elgin-crescent; S. Birt, Leamington; R. Brown, Tavistock; T. S. Carter, Leeds; H. J. L. Fairbrother, Stockwell; A. W. Furber, Kentish Town; G. H. Marriott, Albion-street; H. B. Mason, Exeter; T. A. Roberts, London; M. A. Small, Marylebone-road; L. W. Stevens, Swansea; F. H. Weiss, Montague-place; W. F. Willis, Blackheath. Five candidates failed to satisfy the examiners.

CAUSE OF DECAY OF THE TEETH.

Dr. L. B. Palmer, of New York, has been led to conclude, from a series of experiments, that the decay of the teeth is not, as is generally supposed, due to acids, but to alkalies (*Cosmos and British Journal of Dental Science*). With alkalies he reproduced decay of the teeth as it is seen in the mouth, but was unable to do so by acids. With the assistance of an electric current, acids simply acted on and destroyed the whole of the enamel.

Does Comparative Physiology teach us that the Tooth Pulp performs no Function towards the Vital Permanence of the Human Tooth?

By F. H. BALKWILL.

At the February meeting of the Odontological Society, Mr. Charles Tomes is reported to have said that, "It was not known what the purpose of the pulp was in a finished tooth, nor why the tooth should not do just as well without it. As a matter of fact there were a good many teeth in other animals which did just as well without pulps, and which lasted sufficiently for the animal's requirements during its lifetime. There were certain teeth in lizards in which there were no central living vascular pulps, yet they were not rejected as dead things to be thrown off. Until more was known as to the use of the pulp in a perfect tooth, it need not influence their practice."

This opinion calls in question all our preconceived orthodox notions, and, instead of appealing to the facts of human physiology alone, or the still narrower ground of our own experience, takes stand upon the wide field of comparative physiology. On this account it interests me, as I had already made a conjecture or two in the same field, which, as they led me to an opposite conclusion, I should like to record in contrast.

I quote from a paper in the *Zoologist* for July, 1873, p. 3,589 :—"The problem to be solved in the construction of teeth is rather different to that of bone. Here part of the organ has to resist more or less severe mechanical friction, has to be exposed, and at the same time maintain a strong connection with the living sensitive body. . . .

"Indeed, in fishes generally there seem to be few examples of teeth being implanted by fangs in sockets, and also there seems to be no great permanency of connection between the teeth and their possessors . . .

"Amongst reptiles the same law of constant succession of teeth holds good, which looks as if there was the same *difficulty* of retaining the teeth permanently; but when we arrive at mammalia we find, at most, only one change of teeth, and this apparently in order to accommodate the adult animal with a larger set than would have been convenient for its young state. The peculiarities of structure

which perform this apparently difficult feat are these." Here follows a description of a mammalian tooth.

Owen, in his "Odontography," p. 184, says of reptiles:—"The completion of a tooth is soon followed by preparation for its removal and succession. The faculty of developing new tooth germs seems to be unlimited in the present class, and the phenomena of dental decadence and replacement are manifested at every period of life." I do not know to what lizards Mr. Charles Tomes refers as having permanent teeth without pulp cavities, but as they seem to have been unknown to Professor Owen, the inference is that they form but a small exception to the general law he has laid down, too small in importance to give ground for the opinion that the pulp is of no value to the permanent life of a tooth. In the case of the lizards referred to, there may be peculiar circumstances in their food or habits which do not put their teeth to the average vital or physical strain. In fact, if we review the whole of the vertebrate animals, we find teeth on the plan of the human tooth, having a central vascular pulp, fangs covered by cementum and implanted in a socket, and a crown covered with enamel, are the only type fitted to endure much mechanical wear, and at the same time capable of maintaining a permanent vital connection with the body, and are mainly to be met with among mammalia; the exception being that referred to by Mr. Charles Tomes.

The only other teeth, I believe, capable of being classed as permanent teeth, are such as are continuously growing from a vascular pulp at the base, which fact suggests how their vitality is maintained.

Dentagra: the Tooth-Ache, its Forms of Disease, Causes, Results, and Remedy.

By W. V. MOORE, L.D.S., R.C.S., &c.

Tooth-ache is sometimes merely a rheumatic affection, arising from cold, a carious tooth, but more generally the excess of acids in the stomach from a disordered system or any accidental cause. The remedy should, in this case, be applied to the particular form of the disorder in the system. It is also a symptom of pregnancy, which shows itself more particularly in highly excitable and nervous patients. But

tooth-ache attacks people at any period of life, though more frequently the young and plethoric. From the variety of causes it has been named by some authors *odontagra cariosa*, *scorbutica*, *catarrhalis arthritica*, *gravidarum*, *hysteria*, *stomachica*, *rheumatica*, and *venerea*, this latter producing death to the organ, necrosis, and this arising mainly from the old treatment by mercury, the disease being inflammatory. More or less, all tooth-ache arises from an inflammatory condition of the system, and should be judged of by its symptoms. The periosteum, the main acting body, closely associated with the teeth in the formation, continuation, and their final destruction. This membrane, the periosteum, investing the external surface of the roots of the teeth, is of a fibrous nature, supplied with artery, veins, nerves, and absorbents; to these I presume the tooth owes its life and existence, which depends very much on the general health of the subject, arising from pure air, water, and nourishing food. Exostosis, whether formed at the bottom of the alveolar socket or on the fang of the tooth itself, will be found to be the result of irritation at some period of its abnormal condition; the result of inflammatory action will be either absorption, decay, or deposit of bone. That this results from irritation of the lining membrane is now very generally believed, but what is the cause? We have suggested that it may be produced by pressure at the bottom of the alveolus. But more generally the susceptibility of the lining membrane to morbid impressions, produced by a diseased state of the gums or constitutional tendency, in which case all the defective teeth will be generally sensitive to the pains of tooth-ache. What, then, should be the remedy? No doubt in all cases application to the carious cavity, an injection of warm water and anodyne into the periosteum, and a healthy stimulant to the gums. This, I conceive, will allay irritation, and help to produce a healthy action of this very sensitive part of the human fabric, be a means of preparing the teeth for further use, and for the dentist's skill in filling, thus preserving them from the too common result, decay.

Treatment of the Dental Pulp.

By LANE CLARK, L.D.S., R.C.S.

The methods of treating the dental pulp under its various conditions of disease are many and varied, and

though each of its kind has a certain success, yet withal failures are in certain cases frequent, and we are again compelled to "try fresh fields and pastures new." Knowing this, I venture to add my mite to the troubled science. It has for some time appeared to me a strange way of restoring so delicate an organism as the pulp to health by treating it with such gentle means as strong nitric acid, arsenic, and a few more remedies running from one extreme to the other. My failures have been so frequent in all that I have tried that I was induced to seek for a body which would place the pulp under the same conditions as those in which it lived and flourished; in fact, to try and replace the lost dentine. I have found such means in gelatinised phospho-carbonate of lime, which is capable of being rendered very plastic for a short time and hardening very quickly. In pulps which have been exposed for some time I have found it requisite to mix with the compound a little tannic acid, but even in those cases I finish at one visit. I take care to saturate the cavity at starting with glycerine, so that the air may be kept from the pulp while freely exposing it; after thoroughly removing all the decomposed parts, I place the gelatinised lime over the pulp, and using pressure until a slight sense of pain is felt, I accelerate the hardening of the lime with absolute alcohol. So soon as it is hard, I then treat as an ordinary case and plug at once. My success has been so constant with it that I have now lost all my former fears of failure in conservative treatment of the dental pulp. It may be that the means employed are not new, but whether it be so or not, it has proved in my practice a means of saving many a tooth otherwise condemned by the forceps.

A Remarkable Case.

By ALFRED MOSELEY, Esq., M.R.C.S., L.D.S.

Mr. O—— called on me suffering from great pain on one side of the mouth, and stated that six weeks' previously he had woke up in the morning feeling dreadfully sick, and on vomiting, brought up a quantity of clotted blood, which a friend suggested came possibly from his gums and had been swallowed during the night. He then found for the first time that one side of his mouth hurt him, but put off call-

ing on me till now. On examination, I found the right second lower molar split completely through from mesial to distal side. On extraction, the pulp was found to be in a state of decomposition, and the membrane surrounding the roots highly inflamed and thickened.

I enclose the tooth, and perhaps you will be able to give an explanation of such an extraordinary fracture.

10 Eldon-square, Newcastle-on-Tyne.

Facial Neuralgia, deriving its Origin from Abnormal Complications in the Teeth or Mouth.

PRIZE ESSAY, by J. F. BADCOCK, D.D.S.

(Continued from page 86.)

First, then, let us investigate that *invariable* sequence to the procrastinations which have burdened the existence of that patient who has realised the fact of the caries, but who has considered the next week as the most "convenient season" so long, that at last a sharp and unendurable twinge of pain, growing gradually continuous in its character, has admonished him that our chair has, if we perform our *whole duty*, for once its charms, since I hold that the intelligent performance of that duty involves for such an one—I am now writing as a general thing—not *extraction*, but relief from agony, and the ultimate salvation of the tooth; while to us as practitioners its significance consists not alone in its pecuniary gain, but far and above all, *triumph*, and the consciousness of a duty well and skillfully performed. The first purely morbid condition, other than the fact resulting from ever increasing, never ceasing decay, is an exposed pulp; and of this fact the immediate indication following the presence of a gentle irritant is simply an uncomfortable, nervous sensation, gradually increasing in intensity, while paroxysms of pain become of frequent occurrence. This constant irritation gives rise to extended inflammation, and an abnormal expansion of the veins and arteries necessarily results, creating undue pressure upon the sensitive nerve-fibres in the pulp substance, bound and confined as this tissue is in its hardened and unyielding walls; a steady, excruciating, and limitless pain is the result. The case is in our hands for treatment, and after a sufficient examination by any method freest from suffering to our patient, our diagnosis is exposed pulp.

Under these circumstances I consider it the height of absurdity to contemplate for a moment the salvation of the pulp by capping, or by any other method; and just here I do not desire to be misunderstood. The pulp under consideration is inflamed to its utmost extent, short of the degeneration and disintegration of its tissues, its vessels engorged with inflamed blood are upon the point of yielding to the immense pressure put upon them, while such pressure is crowding their walls upon the delicate nerve-fibres which ramify throughout the tooth's substance in every direction in countless multitudes. The only mode of treatment in such an instance is, I maintain, to anticipate nature by causing the death of the pulp at once; and our first application, instead of being arsenic, should be carbolic acid or creosote, for the purpose of reducing the existing inflammation, since such inflammation is wholly inconsistent with, and actually opposed to, the satisfactory or expected action of the escharotic. The irritation already existing in the pulp is incompatible with that which it is our desire to create as the result of the arsenic; hence, if we apply the latter at once, as is quite frequently done with unsatisfactory results, we, as a rule, only aggravate the evil which we assume to remedy, and only subject the sufferer to additional and unnecessary pain, without accomplishing the object which we have attempted to obtain. If it so be that any have been nonplussed to account for the supposed inefficiency of their "paste," let them *first* apply creosote, or other antiphlogistic, until the evidences are satisfactory that to a marked extent the inflammation has subsided. We may now wisely resort to the use of the arsenic, thus creating an irritation and inflammation so excessively and so suddenly stimulating as to cause a rupture of the vessels in a short time, and thus precipitate the death of the pulp. This having been accomplished successfully, a too often (and I judge simply from individual observation) neglected step should at once be taken—viz., its extirpation, its *entire* extirpation, since if any portion whatever be allowed to remain, cause for sorrow will not be long absent; follow this by faithful endeavour in the filling of the pulp canals, first, with a pellet of cotton freely dipped in carbolic acid, and forced well up to the shoulder immediately next the foramen; next proceed to fill the canal proper with ropes of cotton *saturated* in the hardest quality of os-artificial, and

finish with gold in the chamber and cavity of decay, never omitting to paint the gum slightly with the *ethereal* tinct. of iodine, to allay any possible pericosteal inflammation which may or might ensue.

I am fully aware that there are other methods, more especially relating to the materials used in filling the canals, which meet with the approval of those who advocate them, but I have tried many others and have oftentimes not met with the success which was anticipated, whereas, with the system which I have attempted to demonstrate, I have been almost uniformly successful in obtaining the very best results. In my judgment, no treatment has ever been instituted for these particular cases to be compared, in degree of success, to that of destruction and extirpation of the pulp and filling the roots. I believe that I have saved absolutely ninety-five per cent. of the teeth which I have treated by this system, and I therefore fail to perceive any advantage to be derived from adopting a different course of treatment, which may be at least open to many doubts and of questionable merit. I say "system" in a general sense merely, since in all these cases, as well as others which I may bring forward as being lesions in Facial Neuralgia, *judgment* of the clearest order is ever required; judgment which pen, ink and paper cannot demonstrate or render apparent; hence my term system applies only to that which written or spoken words *can* indicate. Strange as it may appear, yet, from quite an extended observation, it would seem that two facts as related above are not clearly understood by many connected with our profession. First, that when a pulp is destroyed by artificial methods, it is in every instance necessary—there can be no exception—to wholly remove it, and replace it with *some* foreign material capable of being packed most compactly and solidly (hence my preference for cotton and os-artificial); whereas, the large majority of such teeth which have fallen under my inspection have either been filled without extirpation of the dead pulp, or in other cases, in addition to such filling a hole has been drilled in the side near the neck of the tooth, with the avowed intention of providing an escape simply for the future accumulation of pus. Second, that before the death-dealing substance is applied, it is necessary to allay and soothe existing inflammation. Had this tooth under discussion been presented for treatment *before* the patient had suffered in consequence of

its pulp exposure, or had it been accidentally exposed during the progress of an operation, then the state of things is materially changed, and its salvation becomes a matter of the strictest duty, both to ourselves as members of a progressive specialty in medicine, and to our patients. In such instances capping may be *successfully* attempted with almost any of the suitable materials and methods so variously advocated, os-artificial taking high rank as a substance of which the pulp seems tolerant. My preference, however, is as follows : *gently* cover the point of exposure and surrounding portion of dentine (of course after having prepared the cavity) with lactophosphate of lime, covering *this* in turn with a small pellet of cotton barely touched with creosote, fastening the whole in position with cotton dipped in an alcoholic solution of sandrach. Allow this dressing to remain for twenty-four hours, when remove all but the lime, and introduce another layer of the lacto-phosphate, cover this with os-artificial, and when the latter has hardened solidly, complete the operation with gold. The asserted theory to account for the uniformly successful results with this material is, that the lime will, in the course of some fifteen days, induce the secretion and redeposition of new or secondary dentine, which results, of course, in securing the toleration of it by the pulp, as it is a *natural* capping. It is a theory, however, which I personally reject as absurd and unreasonable, utterly so ; but as the *fact* of the pulp's toleration of this substance is indisputable, I account for it, and so regard it, as a mere but most remarkable toleration of a foreign substance by the pulp tissue, while in course of time the lime itself becomes sufficiently hard and solid to permanently attach itself to the surrounding dentine, and with it forming almost a homogeneous mass, which is calculated to deceive the unassisted eye, but which, under the microscope, reveals its true character as lime, and not a secondary deposit of dentine. With this material I have treated, during the past year, forty-two cases of exposure where the pulp had never previously experienced any degree of irritation, and so far as I am able to determine, I have made *forty-two* successful treatments, having lost none that I am advised of, certainly a most remarkable percentage in its favor. I therefore feel warranted in considering it as a treatment which I can most earnestly recommend, and solicit all to try who have not heretofore done so.

Upon the other hand, had our imaginary patient, through the fear of contact with our forceps, courageously borne their suffering until nature had itself accomplished the death of the pulp, and at that moment, or very soon after the case had presented for treatment, we should undoubtedly have discovered upon concussion that treatment was required to combat periostitis, or inflammation of the periodontal membrane, which covers the roots of all teeth. It is a vascular tissue, and its design is at least threefold: it acts as a cushion for the teeth to rest in, thus reducing the risk of serious results in mechanical injuries, since it is exceedingly elastic, and permitting, for this reason, more or less motion. Its vessel supply a portion of the nourishment which the tooth requires, and it affords firmness to the roots in their close relation and attachment to the alveolus. When inflamed from any cause, and among the causes are the accumulations of tartar, or by any mechanical injury, the characteristic evidences of inflammation elsewhere are readily apparent, and may be diagnosed by concussion with a moderately heavy instrument, which will develop, it may be, extreme tenderness upon pressure, the patient will oftentimes remark that it seems to them longer than its fellows, and such is really the case, the elongation having been necessary to permit the thickening and swelling resulting from its inflamed condition. These characteristics will be more or less fully developed, according to the severity of the inflammation and its extent. Just at this point of *seeming* periostitis, judgment is required to determine if the lesion may be successfully treated for *simple* periodontitis or not, since it *may be* a complication in which the *first stages* of alveolar abscess are taking an undiscoverable part, and in the absence of the later characteristics of abscess, the operator may be very readily deceived; but if you so determine, proceed at once to deplete the gum freely of blood by leeching or lancing, the former being most preferable, since the flow of blood is so much greater, and then apply tincture of iodine to the wound, gum and adjacent parts. Cleanse the pulp canal perfectly with tepid water in which a little alcohol has been placed, when it may be filled with cotton saturated in creosote. Continue this treatment daily or less frequently, as the case may seem to require, until the tooth is absolutely free from tenderness and all normal characteristics, so far as possible, made apparent, when the

canal and cavity of decay may be permanently filled, as before indicated, and with a precautionary application of iodine to the gum, your patients may be dismissed, impressing it forcibly upon their mind to return at once upon the slightest symptom of a recurrence of the trouble, when another free application of iodine may usually be relied upon to complete the cure so nearly accomplished upon the first trial. Whatever the cause which may prove the exciting one, there is scarcely any lesion which is so prolific in neuralgic conditions as the above, and owing to the occasional fact of its being exceedingly difficult of diagnosis, I can scarcely say too much to impress upon my readers the value of concussion as a method to assist them in their endeavours. Sometimes only an exceedingly limited tenderness will be noticed by the sufferer in an individual tooth, as you pass from one to another, soreness out of all proportion to the amount of pain present; but in the absence of any other observable manifestation, *look well to the particular tooth in which it occurs*; many a neuralgic affection has thus been easily treated and eradicated. Should a purely legitimate periostitis present, *not involving the loss of the pulp*, such as may result from a blow, a severe cold, the encroachment of tartar, or from kindred causes in a tooth free from caries, or having decay which has not progressed sufficiently to expose its pulp, then diagnose as before, and treat with tincture of capsicum and iodine, after having depleted the gum freely of blood; and in these cases the ethereal tinct. iodine should be preferred, since it is so much more rapid in its action, and serves with greater efficiency in accomplishing a well-developed counter-irritation than the ordinary officinal tincture, or if it is preferred, three drops of tinct. aconite may be employed upon a scarified surface, but in the use of this agent much care must be exercised, since recklessness in using a much larger quantity may be followed by complications of a most serious character, which may result in the death of the party so poisoned. It is, however, moderately effective in the reduction of periosteal inflammation, and was at one time regarded as a specific, though now the discovery and introduction of other equally as prompt and less dangerous remedies have gradually caused its abandonment. Some time since I had the pleasure of successfully treating a very remarkable case of Facial Neuralgia induced by a purely legiti-

mate pericodontitis, and as it is one so clearly illustrating the intense suffering and diffused effects of such periosteal lesions, I shall venture to relate the same, trusting, however that it may not subject me to the charge of egotism.—*Johnston's Dental Miscellany.*

(*To be continued.*)

Death from Rupture of a very Small Intra-Thoracic Aneurism.

By JOHN C. THOROWGOOD, M.D., F.R.C.P.,

Physician to Victoria-park Hospital for Diseases of the Chest; Lecturer on Materia Medica at Middlesex Hospital.

Mr. T. H., æt. 42 years, whom I had known for some five years as a dentist rising into considerable practice, came to me one morning in April last, complaining of very severe pain whenever he swallowed food. The seat of the pain appeared to be about the cardiac orifice of the stomach, and as soon as the morsel swallowed had entered the stomach pain ceased.

The only ailment for which I had been called in before had been obstinate pains, like those of rheumatism, about the body generally, associated with profuse night-sweats. Of late the health had been remarkably good, and flesh had been gained to some extent. So little importance did the patient attach to the pain on swallowing food, that he was contemplating an excursion into the country on the very day on which I was consulted; but from this intention I dissuaded him. It was about April 16th when I saw him for the symptoms just alluded to, and at that time the pulse was 96, tongue clean, spirits good. Careful examination showed some little increase of hepatic dulness towards left; no cardiac murmur, but second sound seemed unduly loud; no cough; breath-sounds normal; no vomiting; bowels open. Patient told me that some years ago he had had a similar attack of pain in swallowing, attributed to congestion of liver, which in a few days passed away. I prescribed a powder of hydrargyrum c. cretâ and pulv. ipecac. co. at bed-time, and an antacid laxative mixture. Three days later he was no better. The pulse was small; at one time it would be 96, and six hours later would fall to 72 or thereabouts. A motion from the bowels was described to me as inky black. These symptoms alarmed me more than they seemed to do my patient; but he promised to rest and take the dose of tincture of opium which I ordered. Nothing new in the way of physical signs.

On April 21st, at 9.30 a.m., just as I was leaving for a distant visit to the country, my poor friend came to me in much suffering. The pulse was 96; tongue clean; bowels loose, but motions not unhealthy in appearance. The pain was now complained of in the back and under the right shoulder. Feeling very uneasy about him, I recommended him at once to see Dr. Andrew, who made a careful examination, and detected a murmur audible below the xiphoid cartilage, and so down to umbilicus, where it ceased. Later in the day this murmur could not be heard.

Towards the evening of Friday, April 21st, the suffering of the patient increased fearfully; and Mr. Maunder, who was called in, injected one-fourth of a grain of acetate of morphia into the tissue of the arm. After this a short mitigation of pain took place, with a sensation as if something had given way in the chest; and presently great collapse came on, relieved for a time by an injection of brandy into the rectum, but ultimately fatal at 9.30 p.m. on the 21st.

Dr. Andrew was of opinion that death was due to the rupture of an aneurism. The correctness of this opinion was proved by the post-mortem examination made by Dr. Andrew, Mr. Maunder, and myself on the 23rd.

On opening the abdomen we found nothing worthy of remark; but, on proceeding to open the thorax, blood-stained fluid ran out from the right pleural cavity, and from this cavity was removed a large quantity of this bloody fluid, mixed with clot. Behind the descending part of the aortic arch was felt a solid mass, which on examination proved to be formed by the posterior mediastinum stuffed with clotted blood, and this blood had forced its way down the mediastinum, and must, by its pressure, have been the cause of the pain complained of at the cardiac orifice of the stomach. The parietal pleura on the right side had given way on the spine close above the diaphragm.

Just below the origin of the left subclavian artery was a small aneurismal pouch on the posterior aspect of the aorta, which had ulcerated into the mediastinum, and formed a swelling of laminated blood-clot. Just below this was another small aneurismal swelling, which had not ruptured, and was large enough to admit the tip of a finger. The aorta was very atheromatous. The escape of blood into the right pleural sac must have taken place very shortly before death, for certainly on the morning of the 21st there was no evidence of anything like pleuritic effusion on that side. The intensely severe pain during the last few hours of life we thought due to the tension caused by the blood dissecting and forcing its way down the tissues of the posterior mediastinum.

It would not have been easy to have recognised by physical signs during life a small aneurism, not bigger than a small walnut, on the posterior part of the descending thoracic aorta. It is, however, not improbable that the attacks of pain in the limbs which occasionally came on in the winter might have been connected with some pressure-effects of the small aneurism in its early and formative stage.

It is not very uncommon to meet with cases of pain of long standing about the thorax and arms, which eventually proves to be associated with some form of intra-thoracic tumour, causing pressure, and so stretching and irritating certain nerves.—*Medical Times and Gazette*.

61 Welbeck-street, W.

Epithelial Discolourations of the Oral Mucous Membranes in Syphilitic Subjects.

The *Clinic* translates from *Schmidt's Jahrbucher* (March, 1876) a description of these appearances which originally appeared in the *Archiv. d. Heilkund*, p. 433, 1875.

These epithelial clouds which occur by preference upon the point and borders of the tongue, and upon the lower lip—points especially exposed to pressure by the teeth or other bodies, as well as to the action of chemical irritants—are generally found as very small bluish-white flat granulations, while sometimes the affected spots take on the bluish-white, mother-of-pearl colour of the hard-boiled white of egg. This colour is often observed in wavy lines around the entire border of the tongue corresponding to the line of the teeth; and on the cheeks it is likewise the part pressed upon by the teeth which is most liable to be found affected. When it occurs in the nasal mucous membrane, it is upon the septum, produced probably by mechanical irritation. These discolourations are rare in women, but quite common in males, probably as the result of oral catarrh produced by tobacco smoke. Schuster saw but one case of this nature in a non-syphilitic; in all others, the history of the affection was clear. Zeissl considers these spots as papules aborted by timely mercurial treatment, and Schuster is inclined to attribute them to the same source. Schuster does not believe them to be necessarily the result of mercurialism, but thinks they are the outward expression either of a cure or of a condition of tolerance of the organism acquired by long continued exposure to a mild form of the disease; they are not indicative of any danger, for the condition of the patients is in general quite good, although some may still be suffering from one or other of the cutaneous affections. Another question is whether this character of disease may be dangerous to a healthy person; whether the person thus affected might transmit syphilis through the sperm; Schuster here mentions a case in which, notwithstanding the apparent excellent health of a man, the wife had become syphilitic, in all probability through the foetus. As to treatment, it has been clearly established that mercurials do not hasten a good result; if no other syphilitic symptoms be present, the mouth should be frequently and carefully cleansed, at least after each meal; the application of a solution of nitrate of silver is followed by excellent results in many cases.

GUY'S HOSPITAL.

CASE OF PYÆMIA FOLLOWING DENTAL CARIES.

By Dr. JAMES F. GOODHART.

Dental caries—abscess—suppuration in the inferior dental canal—acute periostitis of the lower jaw—extension of the inflammation along the pterygo-maxillary fossa to the orbit—suppuration in both orbits, and osteitis of the vault of the skull—pyæmia. Such is a short summary of this interesting case. Its publication needs no explanation or apology, for such a result from such a cause is probably unknown. I am indebted to my colleague, Mr. Howse, for his ready permission that it should be published.

M. C. W., aged four years and a half, was admitted to Guy's Hospital, under the care of Mr. Howse, on September 30th, 1874.

The family history was good, except that there was some account of a tumour in the grandmother. The child had been a healthy boy till six weeks before his admission, when he came home from school with a bad attack of diarrhœa. A few days subsequently he was much frightened by a fire, and it was within a short time of this that his left eye was noticed to swell. In a fortnight the other eye did the same, but no notice was taken of it. He gradually got worse, and for three weeks prior to admission he was in a drowsy state.

On admission, he was delicate and vacant-looking. The left eye was much more prominent than the right, with thickening along the upper margin of the orbit. Beneath the edge, under the eyelid, was a hard, cartilaginous, freely-movable body, which reached backwards apparently into the orbital cavity above the eyeball, while it extended downwards into the eyelid. The movements of the eyeballs were perfect, and sight was unaffected. The temperature was 104·5° in the morning, and 102·7° in the evening; pulse 160.

He was seen by Dr. Fagge, who could discover no cause for the elevation of temperature. Dr. Fagge thought, however, that as the roof of each orbit was evidently affected, and the boy tottered as he walked, and was peculiarly torpid, the disease, whatever it was, had extended from the orbital fossæ to the cerebral hemisphere. The ophthalmoscope revealed only large and tortuous veins, with a small hæmorrhage on the outer margin of the right optic disc. The temperature remained high, and he rapidly became much worse, losing control over his evacuations, and he died nine days after admission.

Autopsy.—The eyeballs were hardly prominent now; but the left upper lid was full, and a hard movable mass could be felt along the orbital ridge. The scalp was normal; and nothing wrong was noticed till, on the removal of the vault of the skull, the dura mater in its frontal part and the longitudinal sinus for half its length were rough and of an olive-green colour from purulent infiltration of the membrane. The corresponding inner surface of the skull was of the same greenish tint and rough all over, partly from the deposition of a layer of new bone; partly from an irregularly excavating caries. Confining the description still to the bones of the skull, nothing further was noticed till the roof of each orbit had been removed, and then a thick layer of similar green-coloured pus was exposed, lying, of course,

between the bone and the orbital periosteum. The orbital cavities (muscles, &c.) were quite healthy. On the right side the pus extended all over the outer side forwards, and appeared externally over the superciliary ridge, while it passed backwards through the optic foramen and sphenoidal fissure *underneath* the cavernous sinus, across the sella turcica and groove for the optic commissure, through the right optic foramen and right sphenoidal fissure,—all this *beneath* the dura mater of the base of the skull, the bone itself being rough and carious, and part of the body of the sphenoid infiltrated with a grumous, chocolate-coloured pus. Thus it appeared the right orbit had become affected after the left. On the outer side of the left orbit pus was traced into the speno-maxillary fossa, and thence to the condyle of the lower jaw. The articulation was free, but the whole of the condyle and much of the ascending ramus on this side was bared of its periosteum, and pus lined the inferior dental canal as far as the first molar tooth, which was decayed, lying loose in its socket, and with carious bone about it. It should also be said that, though the pus so closely surrounded the cavernous sinus on each side, yet these sinuses were quite unobstructed. So, also, was the longitudinal sinus, though its walls were very much thickened. The frontal sinuses were normal. The lump felt during life over the left superciliary ridge consisted of a tough, opaque, yellow mass, very much like some lymphomata as seen in the neck, or like a gummatous mass. It certainly had all the microscopic appearances of some new growth, but after further examination it was evidently of an inflammatory nature. Its precise situation was from the lachrymal gland externally to the inner margin of the orbital ring, and it lay half protruding from and half within the orbit, and adherent to the bone, which on its removal was bare of periosteum.

The brain weighed forty-eight ounces, and lymph was found at its base, and a dot or two of pus was found beneath the arachnoid on the left side, about an inch from the longitudinal fissure. None of the veins contained any coagula. The brain was exceedingly soft, and the number of small cavities formed by softened substance scattered throughout it was remarkable. The whole brain, cerebrum and cerebellum, was studded. Most of them were small—mere pin-points,—but one or two were larger; and they had this peculiarity: that their walls were sufficiently well defined and hard to show that they were not formed by a general softening of the brain, more advanced at some parts than others, but that they were really due to numberless local spots of disease, very probably embolic. Ecchymoses were found in the retinæ, on the pleuræ, and in the substance of the lungs, heart, and kidneys; and no emboli could be found in the vessels. The lungs contained early pyæmic infarcts, and there were early abscesses in the heart and kidneys.

Remarks.—There can be no doubt from the post-mortem appearances that the source of all this mischief was a decayed tooth. It had led to caries of the bone, to suppuration in the inferior dental canal, and thence the pus had followed the course which has been described. The case is one, perhaps, rather curious than instructive, though as a record of a bare possibility it is worth remembering. It is a good illustration of the bad results which may follow a slight amount of mischief in an unhealthy subject, and is remarkable in that there is no

history of any tooth-ache, swelling, or other trouble about the jaws. Excepting a bad attack of diarrhœa, the first symptom noticed was swelling, first of one eye, and then of the other. Notwithstanding that by the time the second eye was affected, as shown by the inspection, there must have been considerable suppuration at the base of the skull, about the pituitary fossa, and very probably about the vault also, the disease at its onset must have been peculiarly insidious, and the pyæmia of late accession, within a few days of his admission. The case has several points of pathological interest; chief of these seems to be the occurrence of chronic inflammatory tumours, such as those in the orbital fossæ, and not abscesses, though they were directly continuous with the suppurating surfaces of the base and vault of the skull. Pus so commonly begets pus. It is not, however, always so. One occasionally finds in the lung, in cases of pyæmia of somewhat more chronic form than usual, indurated spots of chronic inflammation evidently produced in the same way as the, it may be quite adjacent, abscesses. In one instance, in a very chronic case of pyæmia after amputation of the leg, the extension of grey tubercle round the central inflammation was seen. Such cases depend upon some peculiarity in the infective material, or upon defective reaction on the part of the infected tissue, which in turn must, of course, depend upon the state of the body as a whole. Experiments on animals have shown that by varying the strength of the infecting agent, the form—or, perhaps more correctly, the degree—of cell-growth can be made to vary from abscess to tubercle. In this case, however, it was probably no dilution of the poison which led to the orbital tumours; but the whole history shows that the infected tissues were most tolerant, and not easily excited. Had it been otherwise it would have been impossible that such an amount of disease could have existed. In the case of chronic pyæmia, just referred to, the patient had lost so much blood from a uterine fibroid tumour that her leg became gangrenous from the extreme feebleness of the outlying parts of the circulation, and weeks after the amputation which this condition necessitated she died. Is this not always so in chronic pyæmia? It occurs in enfeebled patients whose tissues are in so quiet a state—*i.e.*, so accurately supplied with just the requisite amount of nutriment and energy—that they can hold their own, and no more. In such a condition, where is the blood to produce inflammatory congestions? and the tissue elements have not got it in them to multiply and make mischief. So the wandering cells are few in number; they meet with no response in their lawless excursions and indurations, and organising products result in place of abscesses. The practical point which such cases teach is this—that chronic pyæmia is one stage nearer no pyæmia at all than the local outburst in the more rapidly fatal forms. If it is chronic because, as has been said, supply and demand happen to be adjusted for maintenance only, and not for growth, how pertinent in its suggestions is the process on the treatment of inflammation in general! But, as if to contradict what has been said with regard to the relation between the orbital swellings and the pus elsewhere, the patient in question ultimately died with high fever, and apparently acute pyæmia. Well “the worm will turn,” it is said, and possibly some very fetid change may have occurred in the dental abscess, and thence have been propagated to other parts in the last few days of life. Such a view is quite in accord

with the bacterial origin of pyæmia, which obtains so much credit at present. This much, however, seems certain—that the local inflammations which caused the patient's death, and those which were noticed first some time before death, were of different dates. Between the two the condition of the patient had been altered, both as to his surroundings and his diet, and quite possibly, though advantageously to the vigour of his tissues individually, not altogether to the continuance of life, so far as it was threatened by pyæmia. The logical conclusion of these thoughts is not, as some may think, that patients suffering from any of the various inflammatory diseases are to be starved and bled, and reduced to the lowest possible ebb. They only suggest caution. It is possible to do too much. Pyæmic cases, for instance, particularly, are often stuffed merely by routine. Is it always good for such cases that they should be so? It is probable that Sir James Paget's advice with regard to reduced supplies in carbuncle might with advantage be applied to many other forms of disease, both in medical and surgical practice.

Death from Chloroform.

We regret to have to record a death from chloroform, which occurred at St. Mary's Hospital on July 5th. It illustrates several special points; and, by the courtesy of Mr. Norton, the surgeon in charge of the patient, and of Mr. Juler, the resident chloroformist of the hospital, we are enabled to furnish the following details.

A robust labouring man, aged about 45, was admitted with a fibrous tumour, involving both hard and soft palate; it had been growing for about three months, and was then as large as a walnut, so that Mr. Norton decided to remove it. He advised the man not to have an anæsthetic, but to no purpose; the nature of the operation, and the presence of Wood's gag in the mouth made *ether* inadmissible, and prevented also the use of the mouth-pièce attached to Clover's apparatus, the usual mode of giving chloroform at St. Mary's. The patient, having had breakfast at 8 a.m., and having had one ounce of (diluted) brandy about half an hour before the operation at 2 p.m., and being dressed in an ordinary loose jacket, was placed sitting, though not exactly upright, in an armchair, and Mr. Juler commenced to give chloroform on a napkin folded conewise. The day was very hot, and the quantity first poured out was about a drachm. Very soon the patient began to struggle violently, and more chloroform was poured out, the whole quantity calculated at three drachms, and being certainly less than four. Within

two or three minutes, the patient, struggling violently, had risen to his feet, and pulled the gag from his mouth. Mr. Juler, *before recommencing the chloroform*, had the patient laid flat on the operating-table, and then he turned to take up a cone of flannel with which to continue the administration. The patient was then quieter, and breathing rather heavily; Mr. Norton had a finger on the radial pulse, which was beating normally, when suddenly the sound of breathing ceased, and the face turned rather dusky. Whether the pulse continued afterwards or not, could not be positively stated, but Mr. Norton felt convinced that the respiration stopped first; at the same moment, he saw the tongue protrude between the teeth. The tongue was immediately pulled forward, the head and shoulders drawn downwards below the level of the table, the body being turned somewhat to the left, and Sylvester's method of artificial respiration was commenced and continued for half an hour. A few gasps occurred, and air freely entered the lung, but no sign of life was observed. Meanwhile, the face and chest were slapped with wet towels, and the phrenic nerve faradised, *i.e.*, one pole of Stöhrer's battery was placed on the nape, and the other at the epigastrium. At the *post-mortem* examination, no tangible explanation of the death was afforded; the heart was rather flabby and light-coloured in parts; the lungs and also the brain moderately congested. At the inquest, it being ascertained that the administrator was competent and experienced (having been chloroformist for nearly two years, and having had nine hundred cases and no death), a verdict of "Death from Chloroform" was returned.—*British Medical Journal*.

Trans- and Replantation of Teeth.

Herr Rabatz has during the last three years made very interesting observations on this subject (v. *Memorabilien*, xxi. J. H. 3.; *Wein. Med. Presse*). In that period he has made eighty-four replantations; in forty-six of the cases the pulp was more or less diseased, while the periosteum was found normal. The teeth were drawn, stuffed, immediately replanted, and bandaged. Forty-one healed painlessly within three to four weeks. In the thirty-eight remaining cases periostitis existed. The condition of the pulp is of

secondary importance. If diseased, it was scraped, but in all cases the tooth was stuffed before being replaced. The periosteum was scraped off in twenty of these teeth, and the points of the roots filed off slightly, while in the remaining eighteen the diseased membrane was left attached. In the former set seventeen were successful, of the latter only three. In one case both plans were tried at the same time, one tooth being replanted with the diseased membrane, while it was scraped from the other, both being shortened a little. The result was a perfect success. With regard to *transplantation* from one mouth to another, Rabatz thinks it will never become successful, except in extraordinary cases. The great difficulty lies in the form of the root. It is impossible to tell this before the tooth is drawn, and many might be pulled before one would be got to fit a particular alveolus.

On an Anomaly of Speech, hitherto not Noticed.

By Dr. R. COHEN, Vienna.

The *Allgem. Wien. Zeit.*, No. 22, contains an interesting article as above. The patient, a girl, æt. 10, was in general healthy. Inspection of the vocal organs discovered nothing abnormal. But her articulation, which was otherwise natural, presented the following peculiarity:—She never pronounced S soft or hard [“tönende, tonlose,”], Z, sch, the French sound J [soft, sch, tönende], or R, and the air which should be employed in forming these sounds is expelled through the nasal orifice, instead of through the contracted orifice of the mouth. This is affected by the phonetic organ (in this case chiefly the anterior part of the tongue) being rendered completely inactive, while at the same time the soft palate sinks, and the uvular is pressed against the root of the tongue. Thus the cavity of the mouth is hermetically shut off from the larynx, and the expiratory air forced to escape through the nose. To understand the production of this anomaly, it should be remembered that in pronouncing all consonants, except the resonants M and N, the cavity of the mouth is kept open, and the naso-laryngeal cavity shut off from it by the velum, the uvula being closely applied to the anterior wall of the pharynx. In pronouncing M and N, on the contrary, the cavity of the

mouth is closed by these physiological obstacles, and the naso-laryngeal canal is kept open.

Although S and R are the consonants concerned in this anomalous case, it had no resemblance to either lisping (Blæsitas) or Rostacimus (inability to pronounce R properly), because in both the latter cases the consonants are pronounced, although wrongly, whereas in this case there was no pronunciation of the letters at all; instead of the requisite articulation, simply air which is not undulating being driven out through the abnormally arranged mouth.

This inability to articulate certain consonants rightly, while the expiratory air is driven through the nose, may be called *mogilalia nasilata partialis*. It must be distinguished from rhinophonia (speaking through the nose), an anomaly which consists in pronouncing the consonants, otherwise normally articulated, with a nasal sound.

The only apparent origin was a bad habit contracted in early childhood. Her health was good, her hearing normal, and the child had never been subjected to any traumatic or physic influence which could account for it, the latter being, as well known, influential in the production of other anomalies of speech, *e.g.*, stuttering, stammering, &c.

The treatment naturally depended on three elements. 1. The abnormal closure of the mouth must be corrected, so that the expired air be driven through its proper path, and not through the nose. 2. The patient must be taught that in pronouncing the faulty consonants the nasal canal must be closed in the normal way. 3. The patient must be taught how to form the necessary diminutions in the size of the cavity of the mouth by the tongue, this last being the most difficult task. The normal articulation of consonants could not otherwise be effected than by the combination of these three movements.

The first object was effected thus: the patient was directed to pronounce aloud *a* [as in *father*] and *e* [like *a* in *fate*], several times one after another, and her attention was at the same time drawn to the arrangement of the mouth and larynx, and she was told that in producing the sound of the consonants in fault a similar position would be required. Afterwards, to effect the second object, the patient was made to repeat the syllables *da* [as in *darling*], and *ta* [as in *tartar*] several times aloud, and at the same time she was made to understand how in pronouncing these syllables

the nasal canal is shut off by the apposition of the velum and uvula to the posterior pharyngeal wall. These syllables, *da* and *ta*, were selected for exercise, because, as Brücke has shown, the formation of the fricative sounds under consideration, *s*, *z*, &c., is developed from the corresponding close consonants ("Verschlusslauten," which includes the "explosives" and "prohibitives"), *d* and *t*, by the closure not being complete, for, on the contrary, a slight space is left between the tip of the tongue and the posterior surface of the upper incisors, through which air can escape.

After these introductory exercises the third point, the principal object to be attained, was undertaken.

In the first place it was explained to the child, who was remarkably intelligent, that her deficiency in speech was partly due to her not producing the necessary limitations in the size of the mouth, and she was made to do so, after being shown the way. In order to facilitate her efforts the tip of her tongue was held back a little from the posterior surface of the upper incisors by means of a broad sound, while she kept her mouth in the *d* and *t* position, and at the same time she was directed to expel air through this artificially-formed space, both with and without voice, while observing, of course, the other precautions. After a few failures the little patient was able, to her own delight and astonishment, to produce the *s* sound. After a little practice the sound was laid aside, and the patient could hereby produce the requisite changes in the size of the cavity of the mouth. The *s* sound was by degrees employed in more difficult syllables and words until perfect command of it was acquired.

In order to get *z*, the patient was directed to pronounce quickly after one another *t* and *s* (hard, "tonloses"). According to Brücke *z* is not, as previously supposed, a compound sound, but is produced simply by the rapid pronunciation after one another of *t* and *s*. This practice soon enabled the child to pronounce *z* correctly.

In order to obtain the *sch*-sound, the patient, after instruction in the physiology of its formation, was practised thus: firstly, she was directed to say *ch* [*k*?], and immediately afterwards to bring the anterior part of the tongue into the *s* position, the *ch* was at the same time changed into *sch*. By practice the initial *ch*-sound was suppressed

and *sch* pronounced perfectly at once. The soft (tönende) *sch*, the French *J*, was then easily acquired.

The management of *R* was more difficult. As is well known, Brücke distinguishes two kinds of *r*, a lingual, and a guttural and uvular, the latter being divisible into hard and soft. The hard is not used, the soft uvular *r* on the other hand is the Provençal *r* of the French, which is uncommonly heard in Paris. The soft lingual *r* is the commonest, and is thus formed: the edge of the tongue lies behind the alveola of the upper teeth, but does not make the *T*-closure nor the narrow *S*-space, but the edge of the tongue is bent upward a little, and freely movable, so that the impulse of the air driven from the lungs sets the anterior part of the tongue in vibration. The lingual *r* was naturally selected for exercise, after repetition aloud several times, of *l*. This consonant was selected for preparatory exercise, because *l* and *r* both belong to the same class, liquids, and a rapid repetition of the "*l*"-sound several times in succession produces an oscillating motion of the tongue similar to the *R*-vibration, and hence it forms an excellent introductory exercise. As a fact, this exercise proved practically very advantageous, for the patient was shortly able to pronounce a faultless lingual *R*.

Thus a by no means easy task was accomplished, and after a few general rehearsals, which, with the other treatment did not occupy altogether over six half-hours, the highly gratified child was able to read any passage in which the most difficult *S*- and *R*-combinations occurred, distinctly and normally.

[Persons interested in the subject of Anomalies of Speech will find a most valuable article by Dr. Coën, full of condensed information on the subject in the "Compendium der neueren medicinischen Wissenschaften," edited by Dr. Kraus, of the *Allgem. Wien. Med. Zeitung*. The "Compendium" was published in 1875, and is replete with the latest scientific information on every branch of medicine, including thermometry, ophthalmology, otiatrics, electro-therapeutics, anomalies of speech, uroscopy, sphygmography, laryngoscopy, &c., &c.—ED. DOCTOR.]

Observations on Hare-Lip and Cleft Palate.

Sir William Fergusson, in an article on operations for the cure of these deformities, mentions the case of a young girl,

six years of age, on whom an operation for double hare-lip had been performed during infancy. The prominence of the intermaxillary bones had been bent back into the cleft existing in the palate. There was still considerable deformity existing, for remedying which a second operation was performed. In doing this the intermaxillary portion was removed, and, being macerated, showed that by having been placed in its new position at the time of the first operation, the front surface had become the under one, and consequently the teeth, in developing, had assumed a horizontal instead of a vertical position. When this part projects, Sir William is in the habit of cutting and raising the mucous membrane before removing the bone, thereby leaving the membrane as a soft cushion and a more complete covering to the side not interfered with. In perfecting his recent improvement on the operation for closure of cleft in the hard palate, he has found that in many cases stitches may not be necessary. He says, "I have found again and again that, when the edges of the gap have been pared and the chisel introduced, it answers to cause approximation of the raw margins by stopping the opening made on the hard substance by the chisel, with lint, so as to make the desired closure in the centre. The pledges of lint keep the parts as steady as, if not more so than, the stitches, whilst they obviate the necessity of the additional injury of the stitch-punctures. This practice, I am confident, is available in all instances when the opening in the bones is of brief extent, as the front stitch in the soft palate may be put in close behind the posterior margin of the bones."

He describes a very useful gag for keeping the mouth open during operations on the palate or any part of the mouth. The two legs or blades of the instrument which pry apart the teeth are connected by a hinge with two powerful handles. The instrument can be kept open at any desired width by means of a screw and button. This seems a much more useful and simple instrument than any gag hitherto devised.

Mr. Francis Mason has been treating lately, at St. Thomas's Hospital, a number of patients with cleft palate by applications of strong nitric acid. The ages of the patients vary from a few weeks to several years. He thinks this method of effecting union is especially applicable to cases in which the cleft is of average extent, and even where the hard

palate is partially implicated. The application is attended with no pain or inconvenience whatever to the patient. Other caustics were tried, but nitric acid was preferred. Such cases can be treated as out-patients. The results of this method of treatment have not yet been given, however. —*Boston Medical and Surgical Journal.*

Dental Patents.

170,178—November 23, 1875.—DENTAL POLISHING TOOLS.—L. F. Locke, Nashua, N. H.

The rubber casing or jacket of the tool extends beyond the wooden case, and is covered with sand paper extending still farther. This allows the extreme end of the polishing tool to readily adapt itself to the small furrows in a dental plate.

Claim.—1. In the dental polishing tool described, the conical elastic cushion C, adapted to fit the spindle head B, and having the annulus *d* projecting beyond the extremity of the spindle B, as and for the purpose described.

2. In a dental polishing tool, such as described, an elastic conical cushion C, having its extremity *d* projecting beyond the end of the spindle, and covered by a sand paper collar, which has a portion *c*, extending beyond the end of the cushion, substantially as and for the purpose set forth.

170,342—November 23, 1875.—ATTACHMENTS FOR DENTAL ENGINES.—Thomas L. Buckingham, Eli T. Starr and Samuel S. White, Philadelphia, Pa., assignors to said White.

The pitman is connected with the shaft by a ball and socket joint, so that the tool can rotate and not interfere with the driving connection.

Claim.—The combination, substantially as herein set forth, of the sectional casing, the crank-shaft turning in bearings therein, the reciprocating shaft, the clamping jaws carried by the shaft, and the pitman connected with the shaft by a ball and socket joint, whereby the tool is free to turn axially without interfering with the driving connection as set forth.

170,731—December 7, 1875.—VULCANIZING APPARATUS.—J. D. Heiges, York, Pa.

The steam chamber is inside of the sectional flask. The mould has an annular channel for waste celluloid.

Claim.—1. A dental flask constructed with sections a^1 a^2 , the section a^1 being divided by a perforated plate or tray E, and provided with an internal steam generating chamber, *e'*, beneath the plate or tray E, substantially as shown and described.

2. In a dental flask, the combination, with a section, a^1 , provided with a steam generating chamber *e'*, and perforated supporting plate or tray E, of the removable section a^2 , and cover B, substantially as shown and described.

3. A dental flask embodying in its construction a section a^1 , provided with a steam generating chamber e' , perforated plate or tray E, removable section a^2 , and a top or cover B, the whole being held and drawn together by external bolts or rods CC, working in grooved projections or guides F, and screw nuts GG, substantially as shown and described.

4. The combination with a dental flask, constructed with an internal steam generating chamber of a filling g , provided with a groove or channel g^2 , around the die g^1 , substantially as and for the purposes described.

5. The combination with a dental flask, constructed with an internal steam generating chamber e' , and perforated supporting plate E, of a filling or mould g , surrounding a die g^1 , and provided with a groove or channel g^2 , substantially as and for the purpose described.

170,776—December 7, 1875.—ATTACHING DISKS TO DENTAL PLATES.
Quincy A. Scott, Pittsburg, Pa.

Claim.—1. The combination, with a dental plate, of a removable atmospheric disk or plate, for the purpose and substantially as described.

2. The atmospheric plate attached to the dental plate by means of the screw and nut, substantially as described.

171,009—December 14, 1875.—HAND PIECES FOR DENTAL DRILLS.—
John W. Gilbert, Philadelphia, Pa., assignor to Samuel S. White, same place.

A locking slide closes the path by which the lug on the tool enters a shouldered recess in the socket.

Claim.—1. The combination of the slotted tool socket, the interlocking slide moveable endwise and externally on the tool holder, and the locking spring encircling the tool holder.

2. The combination of the casing, the power driven shaft rotating in bearings therein, and perforated and slotted to form a tool holder, a tool provided with a radial lug on its shank, the spring encircling the shaft, and the locking slide actuated by said spring, to lock the lug on the tool shank in the slot in the tool holder, substantially as herein set forth.

3. The combination of a dental tool socket, formed substantially as described, and a locking slide operating to close the path by which the lug on the tool enters a shouldered recess of said socket, substantially as hereinbefore set forth.

171,106 — December 14, 1875. — VULCANIZED RUBBER HANDLES FOR DENTAL TOOLS, &c.—R. B. Donaldson, Washington, D.C.

Claim.—1. The described method of making rubber handles for dental and other implements, by covering a body or core with strips or pieces of rubber of different colours, placing such rubber wrapped core in a mould, tightening and compressing the mould upon it, and then submitting the whole to the action of superheated steam to vulcanize and harden the rubber, all substantially as set forth.

2. As a new article of manufacture, a handle consisting of a core covered with strips or pieces of vulcanized rubber of different colours or patterns, substantially as and for the purpose described.

171,119—December 14, 1875.—ELECTRO-MAGNETIC DENTAL PLUGGERS.—George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa.

Claim.—1. The frame A, composed of the stock bars *a b*, the barrel B, and the electro-magnet C, substantially as described.

2. The combination, with the magnet C, of the armature, connected with the mallet, to serve as a counter-balance thereto, and pivoted upon the magnet, and vibrating between its poles, substantially as described.

3. The combination of the frame A, the barrel B, the casing, and the reciprocating spindle H, substantially as described.

4. The combination of the frame, the barrel, the casing, the spindle, the mallet, the armature, and the magnet, substantially as and for the purposes described.

5. The combination of the hammer head, the combined counter-weight and armature, the mallet shaft, and the magnet, substantially as described.

6. The cushioning slide K, in combination with the hammer and spindle, substantially as described.

7. The combination with the fixed barrel B, of the rotating sections of the casing and the pistol stock shaped case A, substantially as and for the purpose described.

8. The combination of the mallet and armature connected directly together, as set forth, whereby the armature forms the counter-balance for the mallet, for the purpose specified.

171,120 — December 14, 1875. — ELECTRO-MAGNETIC DENTAL PLUGGERS.—George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa.

Claim.—1. The combination, substantially as hereinbefore set forth, of an electro-magnet and a mallet plugger mounted directly thereon.

2. The combination, in one instrument, substantially as set forth, of an electro-magnet, a mallet mounted thereon and vibrated thereby, and a reciprocating plugging tool.

3. The combination, substantially as set forth, of a plugging tool, an electro-magnet, a vibrating mallet, and a counter-balance, to insure malleting with uniform force in any position.

4. The combination, substantially as set forth, of a plugging tool, a mallet, and electro-magnet, and an automatic circuit breaker actuated by the mallet.

5. The combination, substantially as set forth, of an electro-magnetic dental plugger and circuit breaking mechanism, actuated simply by pressure upon the point of the plugging tool.

6. The combination, substantially as hereinbefore set forth, of a rotating case section, and the electro-magnetic dental plugger, for the purpose described.

7. The combination of the electro-magnet and the two armatures C D, substantially as described.

171,122—December 14, 1875.—ELECTRO-MAGNETIC FANS.—George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa.

Designed for use in dental operations. The fan is worked by an

electro-magnetic motor, and the apparatus is so suspended from a bracket as to be easily adjustable to any position.

Claim.—1. The combination, substantially as hereinbefore set forth, of the rotating electro-magnet, its gearing, the fan shaft, cross-brace M, and the cranked pitman connections between the fan shaft and gearing, whereby the fan is vibrated by the rotation of the magnet.

2. The combination of the fan, the electro-magnet, and its adjustable supporting bracket, through which the circuit passes; these members being constructed and operating in combination, substantially as hereinbefore set forth.

3. The combination, substantially as set forth, of the electro-motor, the adjustable bracket, and the circuit breaking lever, through which the current passes to the bracket.

4. The combination of the horizontally adjustable bracket, the electro-magnet, and the insulated vertically adjustable joint between the bracket and magnet.

171,123—December 14, 1875.—ELECTRO-MAGNETIC DENTAL PLUGGERS.—George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa.

Claim.—1. The combination, substantially as set forth, of the duplex electro-magnet, the oscillating armatures, the plugging tool, and the circuit changing mechanism.

2. The combination, substantially as set forth, of the oscillating armatures, the rocking arm K, carrying the wheel *g*, and the circuit breaker block, with the magnet.

3. The combination of the magnet, its frame, the bearings, the tool movable endwise therein, and the spring catch which holds the tool and oscillating armature, substantially as and for the purpose described.

171,170—December 14, 1875.—DENTAL PLUGGERS.—E. S. Rider, Catlettsburg, Ky., (C. W. Rider, administrator.)

Claim.—1. A dental plugger, having a reciprocating shaft, an anvil, a hammer, and suitable mechanism, whereby a series of successive blows is given to the plugger by means of a continuous endwise pressure thereon, substantially as described.

2. The hammer C, endwise movable on shaft B, and having annular lip *i*, in combination with an endwise movable rack bar G, having projections *d d*¹ *d*², substantially as specified.

171,443—December 21, 1875.—DENTAL CHAIRS.—Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place.

Claim.—The chair elevating apparatus hereinbefore set forth, consisting of the combination of the base or frame, its collar, the nut fixed therein, the screw spindle passing through the nut, and the slotted sleeve inclosing the spindle and moving endwise through the collar, as and for the purpose described.

6,817—December 21, 1875.—DENTAL HAMMERS.—James C. Dean, Chicago, Ills., assignor to Samuel S. White, Philadelphia, Pa. Re-issue of Patent No. 48,708, dated July 11, 1865.

A tubular case containing an actuating spring, a hammer with an

elastic material on its face, and the shank of a tool holder which is encircled by a spring. The hammer is raised by a lever which is automatically tripped, when the force of the actuating spring forces it upon the tool holder.

Claim.—1. The combination, substantially as hereinbefore set forth, in a dental instrument, of a handle, a tool holder, and a hammer actuating the tool holder.

2. The combination, substantially as hereinbefore set forth, in a dental instrument, of the handle, with the hammer and its actuating spring enclosed therein.

3. The combination, substantially as hereinbefore set forth, in a dental instrument, of a handle, a tool holder, a mallet, its actuating spring, and the screw cap which hold the parts in place within the casing, whereby they may readily be removed or replaced.

4. The combination, substantially as hereinbefore set forth, in a dental instrument, of the handle, the hammer contained therein, an adjustable screw cap, and the impelling spring interposed between the hammer and cap.

5. The combination, substantially as hereinbefore set forth, in a dental instrument, of a handle, a spring hammer, and an adjustable trip, whereby the length of strokes of the mallet may be regulated.

6. The combination, substantially as hereinbefore set forth, in a dental instrument, of a tool holder, a hammer and elastic material interposed between the two to deaden the shock.

7. The combination, substantially as hereinbefore set forth, in a dental instrument, of a hammer, a tool holder, and a spring which maintains the tool holder in proper relation to the hammer.

8. The combination, substantially as hereinbefore set forth, in a dental instrument, of a handle, a tool holder movable endwise therein, and an interposed spring which maintains the tool holder in proper relation to the handle.

9. The combination, substantially as hereinbefore set forth, in a dental instrument, of a reciprocating mallet, a retracting catch, and a trip to release the catch.

171,539—December 28, 1875.—HEAD RESTS FOR DENTAL CHAIRS.—

Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place.

The bar attached to the head piece is passed through a pin socketed in the clamp head, the latter being adjustable upon a bar rigidly secured to the chair. Both the pin and the clamp head have a central bore, in which are fitted three pins—one bearing against the bar supporting the head piece, and the two others clasping the bar on which the clamp slides. A turn of the screw forces the two latter together and against the third, locking the head rest firmly in place.

Claim.—1. A head rest mounted upon a supporting bar, secured upon one side of its longitudinal centre, and rocking in a turning post, whereby the head rest is rendered reversible, and a wide range of motion imparted to it, substantially as set forth.

2. The sectional adjusting frame hereinbefore described, consisting of a lower section, a turning post mounted thereon, and a clamp screw, these members being constructed and operating in combination, substantially as hereinbefore set forth.

171,750—January 4, 1876.—DENTAL ENGINES.—Samuel S. White, Philadelphia, Pa.

A water motor is mounted upon a dental chair, and is connected by a band and pulley to a rotating shaft passing through a tubular sheath. A dental tool is rotated by the shaft.

Claim.—1. The combination, substantially as hereinbefore set forth, of a dental chair, a tubular sheath mounted thereon, and a dental tool, driven by a flexible shaft passing through the sheath.

2. The combination, substantially as hereinbefore set forth, of a dental chair, a water motor mounted thereon, and belt connection driving a dental tool.

3. The dental engine, hereinbefore described, consisting of the combination of a water motor, valve regulating mechanism, driving gearing, and a dental tool, all mounted directly upon the operator's chair itself, and constructed to operate in combination, substantially as hereinbefore set forth.

172,029—January 11, 1876.—DENTAL FLASKS.—Alfred James Jordan, Bermuda, assignor to Samuel S. White, Philadelphia, Pa.

Claim.—The dentist's flask hereinbefore described, consisting of the combination of the lower section provided with lugs, the upper section, and the turning clamping frame, resting upon the upper section, and provided with hooks or inclines which interlock with the lugs on the lower section, whereby the sections of the flask may be clamped together by turning the clamping frame.

172,209—January 11, 1876.—DENTAL APPLICATOR FOR ANÆSTHETICS.—Charles G. Von Bonhorst, Lancaster, Ohio.

A spring clamp serves as a handle for two opposing cups, for applying with a sponge some well known anæsthetic to the gums.

Claim.—1. The double handle A, consisting of the arms a a^1 , united by the spring a^2 , and provided with the independent opposing cups B B, for holding and applying the anæsthetic agent to the gums, substantially as and for the purpose set forth.

2. The bow handle A, provided with the cups B B, in combination with the sponges C C, or their equivalent, applied and operating as described.

3. The combination, with the cups or pads B B, of the elastic rings or bands D D, substantially as and for the purpose set forth.

172,726—January 25, 1876.—AMALGAM FOR FILLING TEETH.—John Fry, Johnstown, Pa.

Claim.—An amalgam composed of silver, tin, zinc, platinum, and quicksilver (mercury) in or about the proportions specified.

172,735—January 25, 1876.—MOISTENING DEVICES FOR GRINDING WHEELS.—Andrew A. Hazeltine, New Bedford, Mass.

Claim.—A device or apparatus for supplying moisture to grindstones of lathes, &c., composed of a solid standard, adjustable and spring clamped sponge, and adjustable supply fountain with issuing spout and elastic covers, the whole being arranged and applied substantially in the manner and for the purpose set forth.

172,811—January 25, 1876.—MANUFACTURE OF DENTAL FILLING.—Richard S. Williams, New York, N. Y.

Claim.—1. Dental foil with a film of carbon deposited thereon, as a new article of manufacture.

2. The apparatus hereinbefore described for preparing dental foil, consisting of a Bunsen gas burner, wire gauze, and sheet of mica, constructed and arranged as shown and described.

172,812—January 25, 1876.—DENTAL FOIL.—Richard S. Williams, New York, N. Y.

Claim.—As a new article of manufacture, dental foil alloyed with tin, substantially as described.

173,148—February 8, 1876.—BRACKET STANDS FOR DENTAL INSTRUMENTS.—Otis C. White, Hopkinton, Mass., assignor to Samuel S. White, Philadelphia, Pa.

Claim.—1. The combination of the bracket frame, its bearings, the rod movable freely endwise and turning in the bearing, and the conical friction clamp, these members being constructed and acting in combination, substantially as hereinbefore set forth.

2. The combination of the turning rod, its arm, and the table, laterally adjustable and swinging thereon, these members being constructed and operating substantially as hereinbefore set forth.

3. The instrument stand hereinbefore described, consisting of the combination of the rod turning freely and movable endwise in its bearings, the friction clamp, and the laterally adjustable table mounted on the rod, these members being constructed and operating in combination, substantially as hereinbefore set forth.

173,393—February 15, 1876.—DENTAL PLUGGERS.—J. W. Dennis, Pekin, Ills.

A shoe connected by an adjustable brace to the case varies the angle of the plugger point. The spring hammer shaft is pivoted to a triangular tumbler, which operates the plugger point.

Claim.—1. In combination with the case A, the tumbler B, pivoted at *b* to case A, and provided with coupling connection *e*, with the socket piece *e'* (which receives the plugger *d*), and a coupling *a*, with the sliding bar D, substantially as and for purposes set forth.

2. The shoe E, hinged or pivoted to the case A, and connected by the pivot *g*, to the brace F, and, in combination with the latter, provided with its detent G, on plugger case A, substantially as described.

3. In combination with the case A, and sliding bar D, the crank B, with its plugger socket *i*, and adjustable shoe E.

4. The head I, of the bolt K, socketed in said bolt, and provided with set screw *u*, and forming an abutment for the spring *v*.

5. The hollow *w*, of the bolt K (and its slot *y*), to contain the spring *v*, abutting on the head I at one end, and on the detent pin or screw *z*, at the other, substantially as and for purposes set forth.

173,619—February 15, 1876.—ELECTRO-MAGNETIC DENTAL PLUGGERS.—George F. Green, Kalamazoo, Mich., assignor to Samuel S. White, Philadelphia, Pa.

Claim.—1. The combination of the frame, the plugger tube, the

double coil electro-magnet, the oscillating mallet, the brake piece and its actuating circuit breaker, mounted directly on the axle of the mallet, these members being constructed, arranged and operating substantially as hereinbefore set forth, whereby the circuit breaking mechanism is actuated directly from the mallet.

2. The combination, with the electric mallet plugger, of the spring and set screw, whereby the blow of the mallet is adjusted, as hereinbefore set forth.

173,647—February 15, 1876.—DENTAL MOULDS.—A. T. Keightley, Greencastle, Ind.

Claim.—A metal band or ring imbedded in the plaster around the teeth, to prevent expansion of the same when pressure is applied in stamping or setting the teeth in celluloid plate, substantially in the manner and for the purpose specified.

173,686—February 15, 1876.—TOOL CARRIERS FOR DENTAL ENGINES.—Eli T. Starr, Philadelphia, Pa., assignor to Samuel S. White, same place.

The coil is held in an angular attachment by means of a perforated spring which embraces both sides of the carrier, and allows the tool to be inserted in either end. The edge of the circular opening in the spring rests upon a shoulder on the tool.

Claim.—1. The combination, substantially as hereinbefore set forth, of the angular attachment, its tool socket, and the laterally moving, locking spring, mounted on the attachment.

2. The combination, substantially as hereinbefore set forth, of the tool socket and the locking spring, surrounding its ends, whereby a tool may be applied and locked from either side.

3. The combination, substantially as hereinbefore set forth, of the tool socket, the tangential pin, the locking spring, and the tool shank, provided with a groove, into which the pin takes, and a shoulder to abut against the spring, whereby the tool is prevented from either turning or moving endwise in its socket.

6,921—February 15, 1876.—APPARATUS FOR TRANSMITTING POWER.—Josiah K. Alwood, Metz, Ind., assignor by mesne assignments to Samuel S. White, Philadelphia, Pa.

Claim.—1. The combination, substantially as hereinbefore set forth, of a portable frame, on which the driving mechanism is mounted, a treadle for operating said mechanism, an instrument suspended so as to be capable of moving freely in various directions, belt connections between the driving mechanism and operating instruments, and a tension spring, whereby the driving belt is kept taut, notwithstanding variations in the positions of the operating instrument.

2. The combination, substantially as hereinbefore set forth, of the operating instrument, the belt connections, the driving mechanism, and loose treadle, whereby the position of the treadle relatively to the instrument may be varied.

3. The combination, substantially as hereinbefore set forth, of the operating tool or instrument, the belt connections, the driving mechanism, and a self-acting tension device, interposed between the instrument and its driving mechanism, for the purpose specified.

4. The combination, substantially as hereinbefore set forth, of the driving mechanism, the driven pulley, and the driving belt, passing through a sleeve between the driving mechanism and driven pulley.

5. The combination, substantially as hereinbefore set forth, of the driving pulley, the guides, the swiveled sleeve, and the driving belt passing through the same.

6. The universal swivel joint herein described, consisting of the combination of the hinged joint ring, the flanged conical sleeve, the slide swivel, and the tension spring.

7. The combination, substantially as hereinbefore set forth, of the swivel joint, the adjustable suspension bars, and the tension yoke and frame, for the purpose specified.

8. The combination, substantially as hereinbefore described, of the tension yoke, the tension frame, the pulley mounted therein, the pulley in the casing, and the driving belt.

173,623—February 15, 1876.—ADJUSTABLE DENTAL BRACKETS.—Horace A. Hall, Troy, N. Y.

Claim.—The combination of the double parallel friction bearing arms A, sliding tubular arms S', and telescopic extension table supporting rod E, constructed substantially as and for the purpose set forth.

173,795—February 22, 1876.—APPARATUS FOR CLEANING DENTISTS' FLASKS, &c.—Alfred James Jordan, Hamilton, Island of Bermuda, assignor to Samuel S. White, Philadelphia, Pa.

A stream of hot water under pressure is directed upon the article to be cleaned.

Claim.—The improved portable apparatus for cleansing dentists' flasks hereinbefore described, consisting of the combination of the vessel, the filling and escape tube, the outlet pipe and its regulating valve.

173,864—February 22, 1876.—ELECTRO-MAGNETIC DENTAL ENGINES.—Elihu R. Pettit, Philadelphia, Pa.

Claim.—1. The combination of a magnetic engine with the standard of a dental engine, in the manner described, whereby the armature wheel of the magnetic engine lines with the pulley of the dental engine, and at the same time the armature shaft serves for the support of the dental engine standard, substantially as specified.

2. Also, the armature wheel of a magnetic engine, provided with a band groove to utilise it for driving by a band running on it, substantially as specified.

173,865—February 22, 1876.—COMPOSITIONS FOR DENTAL PLATES, &c.—Cornelius Reagles, Schenectady, N. Y.

The purposes to which applicant's invention is applied are as follows : Dental plates, knife handles, billiard balls, brush backs, and various purposes for which ivory, gutta percha, &c., are used.

Claim.—An improved compound, consisting of pyroxyline, compound ethylated camphor, flexible lac, caoutchouc shavings, Canada balsam and cera alba, in about the proportions substantially as herein set forth and described.

174,267—February 29, 1876.—INSTRUMENTS FOR FILLING TEETH.—
Carl D. Ludwig, Houston, Texas.

The ordinary polishing tool and hardening instrument is made of talc.

Claim.—A dental instrument for hardening and polishing tooth fillings, made of talc, as and for the purpose specified.

174,859—March 14, 1876.—DENTAL PLATES.—Quincy A. Scott, Pittsburg, Pa.

A flexible air cup or retainer is formed with a lug upon its outer side, which lug enters a recess in the plate, and is riveted therein. The metallic retaining device is, therefore, located where it cannot come in contact with the gums.

174,619—March 14, 1876.—TOOTH PICK.—George Clark, Jr., Boston, Mass.

This is a wooden tooth pick, artificially impregnated with a flavour or perfume.

174,942—March 21, 1876.—DENTAL RUBBER DAM.—E. Parmley Brown, Flushing, N.Y., assignor to Henry C. Howells, same place.

A depression is moulded in the rubber dam, so as to project into the mouth. This arrangement prevents all puckering of the dam.

175,046—March 21, 1876.—DENTAL ARTICULATORS.—Geo. D. Davidson, Lambeth, Great Britain.

A tube bent upon itself at right angles carries a horizontal sliding arm, and also a sliding upright standard, to which a second arm is hinged. A rod which holds the upper set of teeth is connected with the hinged arm by a ball and socket joint.

175,189—March 21, 1876.—ELECTRO-MAGNETIC DENTAL MALLETS.—Allen Spencer, Columbus, Ohio, assignor to Samuel S. White, Philadelphia, Pa.

175,505—March 28, 1876.—DENTAL RUBBER DAM PUNCHES.—John Rice, Fort Madison, and P. T. Smith, Burlington, Iowa.

A piece of rubber dam is stretched over the blunt end of a round blade of a pair of shears, and an adjustable thimble upon the end of a bowed blade cuts the round hole.

175,626—April 4, 1876.—ANGLE ATTACHMENT FOR DENTAL ENGINES.—Eli. T. Starr, Philadelphia, Pa., assignor to S. S. White, same place.

Both the bevel gears by which the angle is formed are entirely enclosed within the main barrel or case of the attachment.

175,706—April 4, 1876.—DENTAL RUBBER DAMS.—Henry C. Howells, Flushing, N. Y.

A mirror is affixed to a dental rubber dam, to relieve the dentist from the trouble of holding it.

175,794—April 4, 1876.—TOOTH PICKS.—W. W. Wallace, Philadelphia, Pa.

This is a bow-shaped piece, from the ends of which an elastic cord is stretched.

176,710—April 25, 1876.—DENTAL DRILLS.—Anderson W. Todd, Chicago, Ills.

The cord which operates a dental drill passes over a pulley journaled by the drill, and then passes through a tubular hand piece to pulleys which are connected by a novel attachment to the ordinary dental engine.

177,804—May 23, 1876.—ARTIFICIAL TEETH.—Sherwood E. Cheeseman, Bowling-green, Ky.

The securing pins are in countersunk recesses, and the usual thickened portion on the lingual surface of the tooth dispensed with.

177,157—May 9, 1876.—DENTAL PLUGGERS.—Cassius M. Richmond and Alex. Warner, Jr., San Francisco, Cal.

A pivoted sliding frame carries a cam, which operates a hammer attached to a bent spring over the end of the plugging tool. The cam frame adjusts by means of a sleeve sliding on the tool case.

7,107—May 9, 1876.—(Re-issue).—DENTAL PLUGGERS AND BURNING TOOLS.—Irving M. Seamans, Buffalo, N. Y., assignor by mesne assignments to Johnston Brothers.

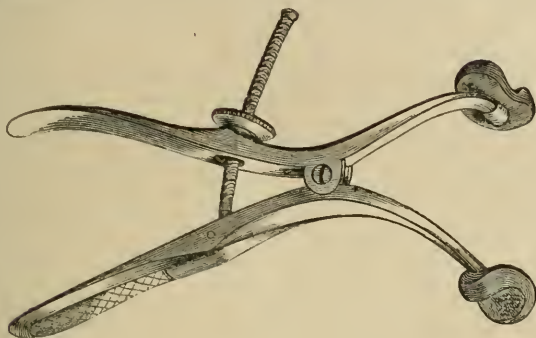
A spring tooth is attached to the hammer, and engages with a screw on the revolving shaft of the plugger. The hammer is elevated by the rotations of the shaft, and released when the spring tooth runs out upon a cylindrical enlargement above the screw. The tool is keyed into its socket by a longitudinal groove, terminating in a cross groove upon the tool and a pin on the interior of the socket.

New Inventions.

GAG FOR OPERATIONS ON THE MOUTH.

SIR,—I am extremely obliged to my friend Mr. Alfred Coleman for directing attention to a paper by him in the *Medical Times and Gazette* of January 26th, 1861, in which he describes, with illustrations, an instrument for keeping the mouth open in operations under chloroform. I have read that paper with much pleasure; and Mr. Coleman has kindly afforded me an opportunity of comparing the instrument in question with the original gag that was made for me

by Messrs. Matthews, fully five years ago (see figure), a modification of which recently appeared in Sir W. Fergus-



son's interesting and instructive paper on Harelip and Cleft Palate. The chief modification of the instrument as depicted by Sir William is, I think, slightly advantageous, inasmuch as the narrow blades, being curved backwards, are, when the instrument is fixed in the mouth, less likely to hamper the operator. The principle in Mr. Coleman's gag and mine is, no doubt, identical; but mine possesses one or two details which I am glad to find meet with Mr. Coleman's approval, and which rather adds to its efficiency.

It is scarcely necessary for me to mention—and I do so simply to acknowledge the very friendly expressions conveyed towards me by Mr. Coleman—that I was perfectly unaware when I had my gag made that one so similar in principle had already been brought under the notice of the profession.

In conclusion, I may say that Messrs. Millikin, of St. Thomas's-street, are now completing a gag for me which, I believe, will be a very useful instrument.—I am, etc.,

FRANCIS MASON.

5 Brook-street, Grosvenor-square.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Mrs. G., who is a relative and patient of mine, is greatly afflicted by an excessive flow of saliva during

pregnancy. So persistent is the secretion that she cannot go for five minutes without having something in her mouth, such as sweets, cloves, lemon-peel, or biscuit, one or other of these alternately. The tongue and uvula are much swollen, the lips, palate, and cheeks are exceedingly tender. On the palate are red patches, as if denuded of epithelium. She has the most distressing sickness if she attempts to swallow the saliva, consequently she is compelled to have a basin constantly by her side, as the constant use of a pocket-handkerchief causes the lips to become very sore.

On three previous occasions the excessive secretion of saliva lasted during the whole period of pregnancy, rendering her life almost unendurable.

If any of your readers have met with similar cases and can suggest a cure, I shall be glad if they will communicate the same.

Yours truly,

G. B.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Can you (or any of your correspondents) inform me whether a Licentiate of Dental Surgery can be legally called upon to sit on coroners' or other juries, or not?

Yours, &c.,

L. D. S.

Stramongate, Kendal, July 14, 1876.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Can any of your readers favour me with information on the following points in Dental Physiology and Pathology which appear to me to have hitherto escaped the attention of writers on these subjects:—

1. Are supernumerary teeth in the permanent set ever preceded by supernumerary teeth in the same positions in the temporary set?

2. Women appear to be more subject to the loss of the upper bicuspid teeth shortly after attaining puberty than men: can any reason be assigned for the earlier loss of these particular teeth?

3. We frequently see the anterior and posterior lower bicuspid teeth widely differing in size in the same mouth—is this found to be in any way typical of sex or disposition, or does it occur pretty equally in both sexes and amongst people of differing temperaments?

Faithfully yours,

Norwich, August 5th, 1876.

STUDENT.

The following correspondence has been forwarded to us for publication :—

Mr. L—— encloses a cheque for £3 3s., Mr. P——'s charges for three hours' attendance on his daughter, the greater part of which three hours, he is informed, was spent in conversation, the professional services consisting in a few minutes' inspection of his daughter's teeth.

Mr. L—— regrets that Mr. P—— should allow young ladies to run their parents into debt without their authority; this observation refers not so much to this trifling account, as to former transactions.

It is a matter of congratulation to Mr. L—— that the "several operations," to which Mr. P—— alludes as having been commenced, were not proceeded with.

F—— Villa, July 10, 1876.

Terrace, July 11th, 1876.

SIR,—Yours of yesterday is now before me, covering cheque for £3 3s., for which please accept my thanks.

Your remarks about my professional services are almost offensive, and come with ill grace from a gentleman whose life has been spent in profitable "conversation" pure and simple.

It was not my business to control the conduct of a young lady quite capable of the government of her own conduct. I feel sure, also, that any check from me would have been resented by yourself as impertinent. When the lady called for an explanation she expressed herself perfectly satisfied.

In conclusion, I beg to say that it is not very gentlemanly for those who, having themselves succeeded, grudge, carp, and gibe at those who are emulating their example.

I am, respectfully yours,

C. J. P——.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—The few passing remarks you make on the founding of a Dental Hospital in Dublin, in your publication of this month, would have remained unnoticed by me but for the invidious way in which you appear to allude to the Dental Dispensary already established here.

and the unnecessary repetition of my name in connection with it ; and I trust to your sense of justice to allow me space in your next issue to reply to the observations you have thought proper to make, and to remove any unpleasant impression or to correct any error which I feel assured cannot be your intention, any more than it can be to your interest, to disseminate.

First and emphatically as a proof that I am not inimical to the dental cause, I refer you to the enclosed prospectus, and before giving you the simple history of the Dental Dispensary, I beg to find fault with the quotation in your remarks headed with the first two letters in large type—"N.B. — *All absolutely poor persons receive dental advice and assistance gratis.*" This limited quotation is made the medium to ask a sneering question as to what is done for those who are *not* absolutely poor? The proper quotation from the prospectus is this—"It (alluding to the Dental Dispensary) is conducted on perfectly unsectarian principles, where *needy and absolutely poor* persons, independent of their creed, will be entitled to and can obtain qualified dental advice and assistance gratis." I feel assured no one can find fault with the enunciation of this broad principle, which regulates the main working of the institution. The attempt, therefore, to play upon the meaning or the introduction of a single word and to imply a wrong construction is as ungenerous as it is uncalled for, and it would almost appear to be your wish to infer an impropriety where none exists, and to cast an undeserved slur on a praiseworthy institution.

I will, however, answer it at once, candidly and unreservedly, and tell you that no advantage of the position they hold for any private gain or end is, or has ever been, taken by any of the officers, myself included, and that those persons who are *not* absolutely poor and needy are refused dental assistance and carry their ailments and complaints elsewhere, exactly in the same way as is practised and observed at the Dental Hospital of London.

It is quite true the Dental Dispensary is only open from nine to ten o'clock daily, and there is only one *dental officer* at present, but it is equally true that that single hour daily is found to contain ample time for its requirements ; the prospectus stating, however, that as the institution becomes still more widely known and better appreciated greater facilities will be given for all purposes, and the Committee will only be too happy to have the opportunity afforded them, of appointing an additional "Dental Surgeon." or some assistants to carry on the increased duties.

I now approach the last paragraph of your remarks, where you intimate that I weaken the cause of dental progress in Dublin by not combining with the promoters of the Dental Hospital! Should this not be read the other way? It is the embryo promoters of a second institution in Dublin, the founding of which does not appear to be necessary, who start up now and seek to weaken that which has been established for a lengthened period, and that too by means which, I may be allowed to say, are not the usual methods observed by men anxious to foster a good cause.

One very good reason why I have not combined with the movers in this scheme is, because I never knew of it; and another is, because I have never been asked. I believe all the other dental surgeons in Dublin were invited to attend some preliminary meetings; but without knowing my disposition towards the movement, without knowing whether a united undertaking could not be arranged, without even the common courtesy of inviting amongst others my colleagues and myself (and I consider our experience, services, and means would have proved of assistance), they chose to act in what may seem to be an underhand way towards a dental institution already established, the first of its kind in Dublin, which has already done good service to the State, and which has been founded at considerable expense, the preliminary appeal to the general community meeting with some response, but not bringing in one penny piece towards its establishment or maintenance out of the pockets of *any dentist* in Dublin except myself, and I think if anything should weaken the cause of dental progress this is one.

Now, with reference to the origin of the Dental Dispensary. Not being a needy man myself, and often cogitating on the fact of having a hall full of poor patients every morning, not caring to attend them in my rooms and not knowing where to send them for relief, and imagining also that many of my professional brethren might be similarly situated, I considered the institution of a Dental Dispensary much needed, especially as none existed at the time in Dublin, where the indigent classes could claim assistance instead of begging it from private practitioners, to the great inconvenience and detriment, to say the least of it, of both, and I called into council, amongst others, the medical men who form the staff. Hence the "head and front of my offending," and the establishment of the Dental Dispensary, which combines all the requirements of charity and the necessary elements to form a school similar to the Dental Hospital of London; and as it is progressing in public favour, it may grow sufficiently extensive to

become the educational department where eventually our qualified dentists on this side of the water might prosecute the whole of their studies, if not ultimately emanate.

The gentlemen to whom I have alluded as comprehending the present staff, whose names and positions are as "household words" in Dublin, were imbued with the same spirit to see a charitable institution of this kind flourishing in our midst, and felt how difficult it was to carry out the idea without considerable influence, assistance, energy, and perseverance, all of which have been exerted to bring about the degree of undoubted success already attained; and now that the Dental Dispensary is prospering it seems somewhat puzzling and irreconcilable to read your remarks about weakening the cause of dental progress by *my* individual efforts.

I have already trespassed too much on your valuable space, otherwise I could say more on the subject. I will now, however, leave your readers to draw their own conclusions, and beg to subscribe myself,

Sir, your obedient servant,

Dublin, July 29th, 1876.

H. CLIFFORD-ESKELL, L.D.S.

The Treatment of Cleft Palate.

TO THE EDITOR OF "THE LANCET."

SIR,—I have had so many courteous and friendly inquiries, from Continental as well as English surgeons, respecting the treatment of cleft palate by the application of strong acid alone, to which you kindly referred in "The Mirror" of May 6th, 1876, that I shall consider it a favour, and it will save trouble, if you will permit me to explain in a few words the *modus operandi* I am in the habit of adopting.

I first produce a raw surface by carefully applying with a stick—not a glass rod—the acid. nitric. of sp. gr. 1.500, and in a few days afterwards I use in the same way the acid. nitric. sp. gr. 1.420 (Ph. Brit.) about once or twice a week to the part, but especially to the fork of the cleft. I have had no bad symptom in any case, and although it is too early for me to lay before the profession the results of my experience, I believe there are numerous cases, in infants for example, and in others who dread an operation, in which this practice may be carried out; but of course it is not universally applicable. I may add that I have been induced to try this method from observing the singular success that follows the application of nitric acid in cases of cleft palate.

in which, after operation, the wound has partially opened. I have had recently, at St. Thomas's Hospital, two such cases, which, but for this method of treatment persistently employed, would have required a second operation.

Whilst I am on this subject, perhaps you will allow me to say that Dieffenbach's operation (or that introduced into this country by Sir Wm. Fergusson) is a very easy proceeding if practised in the following manner, the plan I myself prefer:—Ether or chloroform having been administered, and the mouth kept open with a gag, I first pare the mucous membrane, if possible in one piece, to be sure that a continuous raw surface is produced. The anæsthetic effectually relaxes the muscles of the palate, so that they do not act spasmodically, and in paring the edge there is very slight hæmorrhage. The bone is then divided; and, as in this step the bleeding is frequently very free, not to say profuse, I thoroughly plug each side with a piece of dry lint, which instantly arrests the hæmorrhage. I first tried this method some months ago, and the excellent effect of the practice was remarkably illustrated in a case in which I operated at St. Thomas's Hospital on Wednesday last. The remainder of the operation need not be referred to here. Instead, however, of dividing the muscles at the outset, which in many instances is attended by troublesome hæmorrhage, I find that their action is sufficiently suspended during the healing process by carrying the knife for a short distance in the soft palate in a line with the incision made in the hard palate. If necessary, a few fibres of the palato-glossus and the palato-pharyngeus may also be divided in front and behind the tonsil.

I quite concur with Sir William Fergusson that in many cases the sides of the bony palate may be kept in apposition by lint alone, without the aid of sutures, and I now either leave the lint that has been used to arrest the hæmorrhage, or replace it by another piece of more suitable size.

It appears to me that the difficulties of staphyloraphy arise chiefly from the hæmorrhage which hampers the surgeon. Make the operation comparatively bloodless—as it is if performed in the manner above described,—and it is one of the simplest in surgery.

Your obedient servant,

FRANCIS MASON.

Brook-street, Grosvenor-square, July 14th, 1876.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM JULY 1ST TO JULY 31ST, 1876.

Extractions.	Children under 14	-	-	-	-	389
	Adults	-	-	-	-	706
Under Nitrous Oxide	-	-	-	-	-	200
Gold Stoppings	-	-	-	-	-	147
White Foil ditto	-	-	-	-	-	65
Plastic ditto	-	-	-	-	-	340
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	16
Miscellaneous Cases	-	-	-	-	-	176
Advice Cases	-	-	-	-	-	122

Total - - 2161

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE Monthly Review OF DENTAL SURGERY.

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(REGISTERED.)

DAVIS'S GOLD AMALGAM.

The sale of this Stopping during the past six months ending June 24th, 1876, has been more than treble that of the whole of the preceding year.

W. DAVIS,

15 ARLINGTON VILLAS, QUEEN'S ROAD,
BRISTOL.

THE MONTHLY REVIEW OF DENTAL SURGERY.

No. IV.

SEPTEMBER, 1876.

VOL. V.

The Dental Student.

The Dental student who enters upon his studies at the present time is scarcely to be envied. If he exercises that rarest of intelligence, "common sense," he will probably choose some other vocation than that of Dental Surgery.

For what can he imagine to be the advantage and honour of a profession the only legal qualification of which is snubbed and ignored by some of the leading practitioners of the speciality that he proposes to adopt.

The Dental Surgeon of twelve years' standing who, at great cost of time and money, obtained the licence in Dental Surgery of the Royal College of Surgeons, has doubtless advised his pupil to come to London to obtain a diploma; but the student arriving in town will find it no easy matter to decide which is the diploma that he should strive to obtain. His first impression clearly will be that it is not the Dental Licence, since that does not qualify him for the membership of "The Society of Surgeons practising Dentistry;" his next conclusion will, if he be thoughtful, with equal certainty point to the fact that the membership of the College of Surgeons will not make him a Dentist; whilst lengthened reflection will make him look forward to the time when

the Conjoint Scheme shall be in operation, and the membership of the College will cease to hold the exclusive position that it now occupies. If he be ambitious, it may, perhaps, be a source of anxiety to him to know whether in the dim future he may be permitted to enter the sacred portals of "The Society of holders of the diploma of the Conjoint Scheme practising Dentistry." Having thus by a process of laborious thought come to the conclusion that "naught is everything and everything is naught," he will naturally look around and endeavour to find some one whom he can attack for producing chaos in what he was told was one of the most progressive professions of the nineteenth century. Here we must draw the line and decline to help him.

The College of Dentists of England was designed to give a Dental qualification to those who wished to practise Dentistry. The promoters of the Licence of Dental Surgery desired to bestow a more honourable distinction by uniting Dental with General Surgery in the halls of the Royal College of Surgeons.

Having attained that end, some of the advocates of this alternative scheme have recently discovered that they cannot consort with the practitioners whom they have created, unless they possess in addition to the Dental Diploma the membership of the Royal College of Surgeons. Of their disloyalty to the movement they were pledged to support we have nothing to add to that which we have already said in previous issues of this Journal; but we would warn them that they are provoking such hostility as they will not be able successfully to combat, and deserting a cause that they should of all others have been the most earnest in supporting. Meanwhile we must leave the Dental Student *in statu quo*.

The Month.

THE DENTAL HOSPITAL OF DUBLIN.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—From the interest you take in everything that contributes to the advancement of the Dental profession, I am sure you will be glad to know that the institution recently projected here, viz., the Dental Hospital of Dublin, is progressing most favourably, and when in complete working order will no doubt be of great advantage to the public, and, correspondingly, to the profession.

Until the establishment of the hospital here the position of the poor as regards dental aid has been pretty much the same as in other large towns in the United Kingdom—that practically none was afforded them.

There have, no doubt, always been individuals so sensitive to the sufferings of humanity as to induce them to open their purse-strings to pay for advertisements in the public journals announcing their willingness to perform operations, particularly for the poor, at their own residences.

And others there are, indeed, who have even been still more solicitous—who have gone so far as to establish back-parlour institutions, and issue advertisements and grandiloquent prospectuses throughout the country announcing their anxieties for the relief of suffering humanity, and proclaiming their skill and disinterested intentions and efforts for its amelioration.

One gentleman was so super-philanthropic as to establish an institution, and issue prospectuses and insert advertisements to an almost unprecedented extent ; and I believe this gentleman was so single-minded in his noble work, that "alone he did it," without the assistance of a single brother practitioner !

There are, however, others who have chosen to work silently, who have given an hour every day to see patients gratuitously for the past twenty years, but who were not spirited enough (!) to make the public acquainted by the aid of *advertising* of the services they were willing to bestow.

Now, whilst giving credit for merit where merit is due, it must be conceded that individual efforts are hardly suited to the spirit of the

age; and in this regard the example set by the establishment in Leicester-square has induced the gentlemen belonging to the profession in Dublin to found an institution upon the same basis.

I hope, ere your next issue, to have the pleasure of intimating to you that the Dental Hospital of Dublin is in full-working order.

I remain, yours faithfully,

JOHN O'DUFFY.

MR. H. CLIFFORD-ESKELL, L.D.S.

Mr. H. Clifford-Eskell complained in his letter last month that we had prejudiced his position in connection with the Dublin Dental Dispensary by quoting only a part of the advertisement to which we referred. We have therefore much pleasure in reproducing the advertisement in full. It does not, however, seem to mend matters much, whatever Mr. Eskell may think:—

From the *Freeman's Journal*, Dublin, May 2, 1876:—

DUBLIN DENTAL DISPENSARY, MIDDLE ABBEY-STREET.

Consulting Physician—THOS MASON, Esq, M B,
London, Physician to Mercer's Hospital.

Consulting Surgeon—EDWD LEDWICH, Esq,
F R C S I, Surgeon to Mercer's Hospital.

Surgeon Dentist—H CLIFFORD-ESKELL, Esq,
L D S, R C S E.

Analæsthetist—F ALCOCK NIXON, Esq, L R C S I.

Secretary—Mr JAMES GERAGHTY.

&c., &c.

Funds in aid of the above Institution urgently needed.
N.B.—All absolutely poor persons receive Dental advice and assistance gratis.

The Dispensary is open from 9 to 10 daily.

SUICIDE OF A DENTIST IN DUBLIN.

Dr. Wade, of 208 Great Brunswick-street, reported to the police that at an early hour on Thursday, the 14th, he was called to attend a man named Alexander M'Clean, of No. 10 Great Brunswick-street, who, it is said, was by profession a dentist. The doctor found him dead, and it is said that the deceased had poisoned himself with prussic acid. Dr. Wade's testimony bears out the allegation of suicide, and M'Clean's wife also asserts that her husband wilfully administered to himself poison, observing in the course of the act that he was tired of his life. The police state that the deceased had been addicted to drink, and, further, that his domestic relations were of an unhappy character.

The Action of Nitrous Oxide.

By ADAMS PARKER, L.D.S., R.C.S.

A lady brought her daughter, æt. 17, to me respecting several decayed and painful teeth, and, upon a careful examination, four required removal from the upper jaw and four from the lower; they were nearly all decayed to the margin of the gums, causing very great pain, and consequently throwing the mastication on to the anterior teeth, which were sound and well-developed. It was agreed, with the consent of her medical adviser, that she should have nitrous oxide gas and as many removed at one sitting as would admit of, and a further sitting for the remainder. The first administration of the gas was perfect, and four teeth from the upper jaw were removed, the patient recovering very rapidly, but not feeling anything of the operation.

The second administration took place about one month afterwards, a slight indisposition preventing her coming sooner. The same apparatus, mouth-piece, gag set being used, bag after bag of gas was consumed, and no anaesthesia produced; four separate times I asked the patient to elevate the hand; when it was done, there was not the slightest lividity, so I determined to give no more gas and proceed to remove the remainder of the teeth. I removed the four from the lower jaw, not a muscle moved, and, so far as the operation was concerned, it might have been painless. Upon the removal of the last the patient hurried to the spittoon, washed out her mouth, and acknowledged having felt the whole operation.

There was no escape of gas round the mouth, and yet she had taken enough for three cases without becoming unconscious.

Can any of your readers inform me if such a case has happened to them at any time, and what inferences may be drawn from this particular one? Gas taken from one of Barth's 100-gallon bottles.

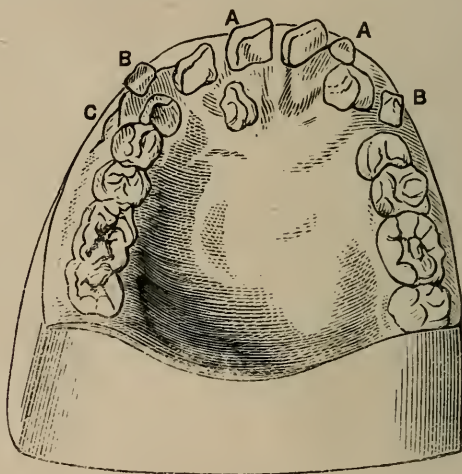
Cases frequently occur where one patient will take a much larger quantity of gas than another, but yet they ultimately go off; but the patient was perfectly conscious the whole of the time, and showed not the slightest inclination to the contrary, and yet the calmness and resignation during the removal of three large molars.

10 Old-square, Birmingham.

A Case of Supernumerary Teeth in the Temporary Set succeeded by Supernumerary Teeth in the same position in the Permanent Set.

By WILLIAM E. JAMESON, L.D.S., R.C.S., &c.

A case, of which an accurate illustration is appended, in which supernumerary teeth occupying positions between the upper central and the upper lateral teeth have been preceded by supernumerary teeth occupying the same relative positions in the temporary set, is believed to be of sufficient rarity to warrant publication.



In the above A.A. are the supernumerary teeth occupying, as will be seen, very dissimilar positions, the one on the left side of the mouth being external to the proper arch, whilst the one on the right has grown more rapidly, and is considerably within it, encroaching in fact to a great extent on the palate. B.B. are the permanent canines, both appearing somewhat without their proper circle, this being caused probably, on the one side, by the undue retention of the temporary canine C., and on the other by the want of space, resulting from the positions of the supernumerary and normal lateral teeth. The patient was a well-nourished young gentleman of, as the illustration indicates, twelve years of age, who would rarely permit proper attention to

be paid to his teeth, but from whose mouth the writer removed some years back the supernumerary teeth in the temporary set, whose successors have now appeared. The teeth in the temporary set were, however, regular in their positions, and so nearly regular in form that a difficulty was experienced at the time in deciding which were the supernumerary and which the proper deciduous lateral teeth.

50 Gloucester-place, Portman-square, W.,
August 31st, 1876.

Supernumerary Tooth.

By J. CALDCLEUGH.

I herewith send you a model and a supernumerary tooth which I extracted with the greatest difficulty a few days ago. My patient was a strong, healthy young man,



about twenty-five. Several attempts had been made to remove it without success previous to my seeing him, and he had been advised to let it remain; but as it greatly impeded his articulation, he would not do so. There is nothing remarkable in the case except the large size of the tooth, and the great force required for its extraction; but, as I had taken a model, and as it is a good specimen, I send it.

42 Saddler-street, Durham.

Remarks upon Davis's Malleable and Quick-setting Gold Amalgam.

By T. WILSON HOGUE, D.M.D. Harvard, Stourville, Bournemouth.

It has fallen to me to see within the past few days several patients in whose mouths I had used this amalgam experimentally.

As the result, in my experience, has proved it to be a most unreliable material, it seems to me worth while to communicate this through your journal, hoping in that way to ascertain the experience of others.

The plugs, some of which have not been introduced six months, seem to soften in the mouth and disintegrate.

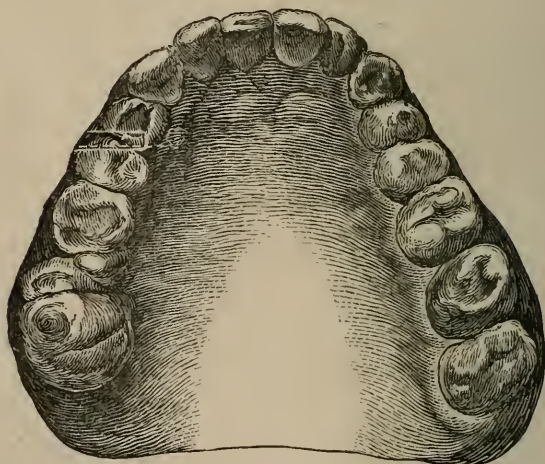
The rubber dam, and every possible care was taken in introducing these stoppings.

This process of disintegration has also taken place in a trial plug made in a large hole, specially cut on the lingual surface of an inferior vulcanite denture, and which was allowed to harden for days before being put into the mouth.

Davis's Gold Amalgam, on the other hand, has proved with me a capital material, indeed preferable to all other amalgams.

A Third Molar in an Abnormal Condition.

By W. H. ROLLINS.



Age, 21 years; male; dentist; American by birth and parentage.

He does not remember when his second molar came, but is confident that the posterior molar on the right side of the upper jaw has been so long present that it cannot be an early erupted third molar. Although the space between the two large molars on the right side of the upper jaw had existed for a number of years, the tooth which now occupies it did not appear until he was between eighteen and nineteen years old. I think the case unique, and its bearings upon the origin of the enamel germ of the third molar apparent.

Boston, U.S.A.

The Dental Manufacturing Company, Limited.

ANNUAL GENERAL MEETING.

The Annual General Meeting of the shareholders of this Company was held at Nelson's Portland Hotel, London, W., on Monday, August 21, 1876, D. D. Hepburn, Esq., in the chair.

The Chairman, in opening the proceedings, expressed his pleasure at meeting the gentlemen present, some of whom had travelled a long distance to be with them; and after referring to the several matters that he would have to bring before them said that, with their permission, they would take the Balance-sheet as read, and that he would call upon the Secretary to read a comparative statement between this and last year's accounts, which he believed would assist them to better understand their real position.

After this had been read, the Chairman remarked upon the very favourable condition of the Company. It would be seen that good work had been done during the past year—the list of members had been increased considerably, and the business of the Company had also increased more than ten per cent. It would be a source of congratulation to them all to find the Company so satisfactorily established in London; they had now more facilities for manufacture, and they might reasonably look forward to a further increase in their business.

Their manufactures were receiving high commendation on all sides, and he could assure them it was the aim of all those concerned in the production to strive for excellence.

With reference to the expenses, it would be seen that they had also an increase in those, consequent upon the London purchase and the conducting of business at the two houses. He would also mention that the whole cost of alterations to the premises in London had been charged in the accounts before them.

They would notice in the Balance-sheet that Mr. Crapper is a creditor for the amount of London purchase. The Chairman here explained that he attended in London with Mr. Brierley, Mr. Crapper, and the Secretary for the purpose of negotiating with the holders of the property, but found that the lawyers preferred dealing with a private individual to a limited company, whereupon Mr. Crapper kindly came forward and, assisted by the Secretary, treated for the

property and business, and after tedious and lengthened negotiations, extending over several weeks, completed the purchase on behalf of the Company, very much, he might say, to the satisfaction of the Board, and he hoped to the satisfaction of the Shareholders.

The Chairman then proposed the adoption of the Report, which recommended out of the net profits a dividend for the half-year ending June 30, 1876, at a rate of 10 per cent. per annum, and the following deductions of 10 per cent. from Goodwill, 5 per cent. from Plant, and that 250*l.* be carried to the Reserve Fund, the balance being brought forward to the credit of the next year's accounts.

Mr. Crapper seconded the adoption of the Report, and remarked that he had the utmost confidence in the success of the Company, and he also felt confident that the step they had just taken, viz., to establish themselves in London, would prove to be a step in the right direction. He likened it to a coal proprietor sinking an extra shaft, a very expensive operation at first, but one absolutely necessary to enable him to reach the hidden treasures. After some remarks from Mr. Wormald, Mr. Bacon, and others, the Report was unanimously adopted.

The election of officers was then considered. The Chairman said Messrs. Brierley and Mawson were the retiring Directors, and that there were five gentlemen offering themselves for the vacancies on the Board. The ballot was then taken and the result declared to be in favour of Mr. D. A. Wormald and Mr. E. Pierrepont. The Chairman therefore declared those two gentlemen duly elected as Directors.

Mr. Oakley-Coles then proposed a vote of thanks to the retiring Directors.

The resolution was warmly seconded by Mr. Macleod, of Edinburgh.

Mr. Hepburn, the Chairman, in reply said he felt a great interest in the Company, believing with Mr. Oakley-Coles that it had a powerful influence for good. He was glad to see many of his friends were becoming members, and he was sure many others would join them when the principles of the Company were more widely known. One of the original objects of the promoters was to prevent that wholesale creation of dentists which was so detrimental to the interests of the profession, and in this particular he believed the Company, by its united influence, had done much good. In acknowledging on behalf of the Board the vote of thanks accorded to them, he must say it was most gratifying to them to hear their services referred to in such terms as those used by Mr. Coles and Mr. Macleod, and he could assure them that the knowledge that their endeavours were appreciated by the body of Shareholders was most encouraging.

A vote of thanks, proposed by the Chairman, seconded by Mr. Crapper, and supported by Mr. Macleod, Edinburgh, was cordially given to the Secretary for the earnestness and energy displayed in the service of the Company during the past year.

The election of Auditor then took place, when Mr. J. W. Davidson was re-appointed auditor for the ensuing year.

A cordial vote of thanks to the Chairman for presiding brought the meeting to a close.

A number of the members dined together at the hotel in the evening, amongst others, Mr. Hepburn, Mr. Oakley-Coles; Mr. Macleod, Edinburgh; Mr. D. D. Wormald, Bury; Mr. Cormack, London; Mr. Crapper, Hanley; Mr. Bacon, Tunbridge Wells; Mr. Vandenpant Mr. Ball, &c. &c.

The American Dental Association.

[FROM AN OCCASIONAL CORRESPONDENT.]

The Sixteenth Annual Session of the American Dental Association was held in Philadelphia from the 1st to the 4th August, under the presidency of Dr. A. L. Northrop, of New York City.

The attendance of members and delegates from local societies was very large, and all the great and numerous attractions of the City of brotherly love and the Centennial Exhibition failed to seduce this large body of earnest workers and thinkers from their fatiguing task. The attendance of foreign dentists, who were cordially invited to take part in the meeting after approval of the Executive Committee, was not so large as might have been anticipated in the Centennial year; but Spain, Brazil, Chili, and Japan were represented, and, to my surprise, the only representatives of England were Dr. George Cunningham, who graduated last February from the Harvard Dental School with the highest honours, and Mr. G. W. Rutterford, of London.

The Reports of the several Committees and the discussions that ensued were very interesting, but somewhat too lengthy for the amount of work to be got through; so much so that several Reports had to be remitted to the Committee of Publication without being read or discussed.

The clinics were not up to their average excellence, for want of volunteers, which was not surprising considering the height of the mercury. Dr. Bonwill, of electric mallet celebrity, gave a very instructive demonstration of the utility and application of his invention.

Professor Foster Flagg demonstrated at his office the application of the Union Electric Motor to the S. S. White dental engine, and showed the manner of manipulating a new amalgam.

The Association will meet next year at Chicago, with Dr. Keely, of Ohio, as president.

This very successful reunion was brought to a happy termination by a magnificent reception and water excursion offered by the dentists of Philadelphia to the members of the Association, the foreign visitors, and their lady friends. This entertainment took place on board one of those floating palaces only to be found on this side of the Atlantic, and comprehended a trip both up and down the beautiful

Delaware river. After a sumptuous repast the company assembled, under the able direction of Professor Stellwagen, to listen to the speeches of representative men from the several colleges, the various States, and foreign climes. Dr. Cunningham (England) met with a flattering reception. He gave an interesting sketch of the recent advances in dental education in England, and, while regretting the absence of our shining lights, concluded with a graceful allusion to the very hearty welcome always accorded to his countrymen by their professional brethren in the United States. Music and dancing and a beautiful moonlight evening completed one of the most enjoyable festivities at which I have ever assisted. Your English representatives must have been astonished, indeed, at such a friendly and social termination to a professional gathering. I "guess" it will be some time before your Odontological Society charts a vessel for the day for a similar outing.

Further Observations on Hare-lip and Cleft Palate.

By SIR WILLIAM FERGUSSON, Bart., F.R.S.,
SURGEON TO KING'S COLLEGE HOSPITAL, &c.

In April, 1874, my experience of the supposed new operation extended to only three or four cases. It seemed to me so likely to be of service in cases which I had abandoned in despair, that I felt it a duty as well as a pleasure to let my professional brethren know as much as I could communicate at that early date. The number in which I have now had similar experience amounts in all to eighty-two. This experience is larger than I could have anticipated in less than twenty months' time, but it may be considered more valuable on that account, both as regards numbers and freshness of work. The results have been such as to induce me to consider the process which I recommend as a vast addition to our surgical resources in this special department. In the above number (eighty-two) fifty-six are cases treated for the first time; the remainder are instances where further manipulative interference has been required, including examples of holes, large or small, in the hard palate, which I had left as beyond help from surgery excepting by means of an obturator, associated with

defect of teeth in front. In two of these I consider the proceeding to have entirely failed. In these each patient was only four years of age, delicate, and with a wide gap. Although mechanical approximation in the middle was satisfactory, union by the first intention failed. Inflammation seemed greater than could be desired, and slight necrosis took place in each, so that the gap was left even wider than before. In several instances, particularly in the early operation before precision in the use of the chisel had been acquired, one or possibly two small pieces of bone came away necrosed, but considering how the chisel has been freely used in some of these cases, I have been astonished how little damage has been done to bone. In some instances, union failed both in hard and soft parts from unaccountable causes, just as happens, from time to time, when the soft palate alone is involved; this is seen sometimes even in favourable cases of hare-lip, but my success has been such that I feel great confidence in the successful result of almost every instance of well-performed operations of the sort. Where holes and slits have been left either in hard or soft palates, or where union has been defective in the uvula, such defects have usually been amended at one or more subsequent operations, to which patients have readily submitted, owing to former immunity from pain under chloroform.

In one instance, an attack of scarlatina thwarted my best efforts; and in another, unhealthy inflammation arose after three operations, and ulceration marred, in some respects, the completeness of the proceedings.

The cases in the hard palate, which have given me most trouble, have been where the vomer has been extensively attached to one side. In most of such cases the vomer diverges to one side. The palate can here be as readily split as if no vomer were present, but two objects of the splitting cannot be obtained; the margin of the palate can scarcely be drawn towards the middle, and the flap cannot be brought downwards to meet its more movable fellow. This has been a cause of failure which I did not at first appreciate; but subsequently I have achieved success by chiselling on one side, and paring off the soft tissue from the hard palate, on the side where the vomer was, and stitching it to the more substantial flap on the other side, thereby combining the new and old processes, with benefit

to the patient, and some additional credit to our surgical resources in this locality.

Mr. MacCormac has most obligingly laid before me most of the German authorities on the subject. Although Dieffenbach suggested the operation in 1826, no case of his has been recorded. It seems to have been put into execution for the first time in 1834, by Bonn, with success. Langenbeck, from 1849 to 1856, operated in three cases, but definitively abandoned this proceeding. Two cases of openings in the hard palate, from syphilis, have been operated on by Bühring on similar principles, but unsuccessfully. Between 1826 and 1856, some half-dozen cases have been recorded by German authorities, in which the hard palate seems to have been cut by saw, knife, and chisel; but altogether the circumstances may be considered so different from those which I have described within the last twenty months, that there is but little resemblance between them. Muscular action, particularly that of the levatores palati, is not even referred to; the use of anæsthesia or a gag is not alluded to in any of them, nor is the attitude of the patients—which I consider a great element in modern staphylorrhaphy.

Here, however, is what I contend for in support of my paper of April 4th, 1874, in bringing forward fifty-six original cases operated on, chiefly in accordance with the views therein propounded since that time, all of which, with a few exceptions above referred to, have been successful. In a considerable number of these cases, further operations have been required, and many of these were of a kind which, under former views, admitted of no remedy, excepting by artificial plates. The further interference in these cases has been such as to induce my assistant and registrar Mr. Rose to put down each as an operation; because, in each such instance, chloroform has been used, and the whole manipulative process on the hard palate has been in a manner repeated. Edges have had to be made new again, stitches introduced, and chisel applied. My reasons for stating that the circumstances of twenty or forty years back are different are that, in former times, as far as I can understand, the patients were seated upright; now, in my practice, they lie on a table; then there were neither gag nor chloroform, and in these I am of opinion that much of our modern improvement in practice consists. In my former

paper, I had the pleasure in according to my friend Mr. Thomas Smith, of St. Bartholomew's, the merit of introducing the use of chloroform and the gag in these operations; and I feel further bound to repeat my admiration for his forward movement in regard to these almost essential adjuncts.

Experience has led me to make some modifications in practice formerly described, which I fancy worthy of the object of this present paper. In dealing with a cleft in soft and hard palate, I still adhere to my preliminary division of the levator palati, on each side; but if from the size of the gap in the hard palate it be deemed needful to introduce one, two, or more stitches, I advise that the holes for them be bored with the bradawl, and that the stitches be introduced before the chisel is applied. I think it an advantage, too, to make the edges of the gap bare before loosening the portions of the palate with the chisel. If these parts be made loose first, it is very difficult to push a bradawl or needle through, and there is great risk of one or both slipping, so as to separate periosteum from bone and endanger the occurrence of necrosis. This I believe to have been the cause of the misfortune in the two cases above referred to, when the operations signally failed. But I fancy I have further modifications and improvement to impart here. Recent experience has led me to the fact that stitches may not be necessary in many instances of cleft in the hard palate. I have found again and again that, when the edges of the gap have been pared and the chisel introduced, it answers to cause approximation of the raw margins by stopping the opening made on the hard substance by the chisel, with lint, so as to make the desired closure in the centre. The pledgets of lint keep the parts as steady as, if not more so, than the stitches, whilst they obviate the necessity of the additional injury of the stitch-punctures. This practice, I am confident, is available in all instances when the opening in the bones is of brief extent, as the front stitch in the soft palate may be put in close behind the posterior margin of the bones.

In my former paper I referred to gags, and particularly to those of Mr. T. Smith and Mr. Wood. For various reasons, which need not be dwelt on here, I have set these aside in favour of a more simple apparatus, chiefly suggested by my friend, Mr. Mason, of St. Thomas's, and in a manner perfected

by Messrs. Matthews, instrument-makers in Carey-street, which I strongly recommend as the best I have yet seen for the operation in question. In fact, I consider the gag as an essential instrument for the modern proceeding, for without it chloroform would be worthless.

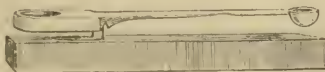
The narrow blades are introduced shut between the teeth on either side the surgeon chooses, and are opened by pressure on the handles at the will of the assistant who holds them. The power of the instrument is such that, if care be not taken, the lower jaw may actually be luxated, as I have seen more than once, although happily with no permanent evil. There is a peculiar twist in the blades of this instrument as regards the cheek and margin of the mouth, which can be better appreciated by looking at them in action, than from any description that might be given here. The length of the whole instrument is about seven inches, and it will be useful to have two, one slighter than the other, to suit the mouths of patients from four to ten years of age. This gag will be found of much value in many operations about the mouth and tongue, and I presume to say that it will prove a valuable aid to the dentist.

On thinking over all that I know of these matters, and especially as regards my own humble work, I am impressed with the slowness with which facts and improvements have come upon my mental conception. I believe that I was the first who dissected and described the anatomy and physiology of cleft-palate (cleft, be it observed), yet five years or more passed before the simple mechanical value of the information thereby obtained dawned on my mind. Neither the action of the levators in tugging upon the stitches, nor that of the superior constrictors of the palate in closing the cleft during deglutition, were thought of; but happily, when tenotomy and myotomy were in the full swing of novelty and fashion, I bethought me of my old dissection, which, having been fortunately preserved as unique, gave me the opportunity of further study and reflection. Yet, even now, after a comparative calm in my own mind, I am amazed at the slowness with which point after point has gradually come upon me in an experience of between three and four hundred operations, including old-fashioned and new. These latter observations have been more impressed on my mind within the last two years than at any previous date.

New Inventions.

FLETCHER'S DIFFERENTIAL BALANCE FOR AMALGAMS, giving at once, without weights, the quantity of Filings required for any quantity of Mercury.

The Balance is strong, extremely simple, and takes up little more room than an ordinary pocket knife.

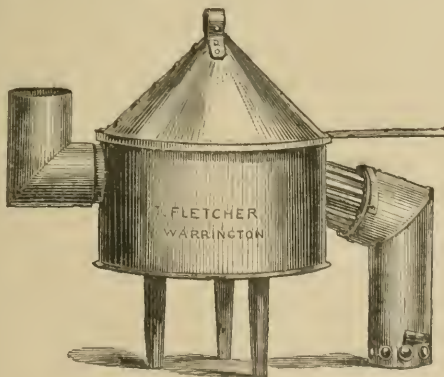


INSTRUCTIONS.—Drop a small bead of Mercury first in the small cup on the long arm, and then gradually pour sufficient Filings into the larger cup on the short arm until balanced. The proportion obtained is 1 of Mercury to 4 of Filings.

Place the finger over the Mercury whilst the Filings are turned into the hand.

IMPROVED LADLE FURNACE.

This form does away with all the objections to the original pattern. The burner is at the side safe from injury, and the metal is spilt over the edge of the ladle. All metal



spilt collects in a button, and can be taken out without loss when cold. The chimney is a fixture, and by adding to or reducing its length any power or speed of working may be obtained at will, depending on the available gas supply. The time required to melt a 7-inch ladle full of zinc (total

weight 13 lbs.) is, with 4 ft. chimney 24 minutes, with 6 ft. chimney 20 minutes, and so on in proportion. Lead and tin require about one-third the time. The inner portion of the furnace is strong cast-iron, and the whole arrangement is made to stand constant hard work without injury. Gas supply required from 20 to 30 ft. per hour, depending on the length of the chimney. The flames must burn with a slight tinge of white at the tips, and should be just visible at the small hole in the chimney elbow.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—I am a Dental Student, and wish to be informed the course of tuition the Dental Surgeon is supposed to give with regard to lectures, operations, treatment of cases, &c.

Will you kindly permit me to ask a few questions in your valuable REVIEW, so that some of your correspondents may reply :—

1st. What should be the duration of each lecture ? At the hospital in which I am a student the Dental Surgeon has lectured but six times during the last winter and summer sessions, each lecture not lasting more than twenty minutes ; in all, a matter of two hours. Is this sufficient to obtain a thorough knowledge ?

2nd. On the morning of his attendance, should all the teeth be extracted previous to his arrival by an unskilful student, leaving a couple as a matter of form ?

Should not the teeth be treated under the direction of the Dental Surgeon, so giving him the opportunity of explaining the treatment necessary ; or, if needs be, of extraction ? In our hospital treatment it is never adopted—the rule is extract, not cure.

I am, dear Sir, yours obediently,

August 29th, 1876.

A STUDENT.

N.B.—I should imagine that the officials of the College of Surgeons are not aware of the mode of treatment adopted by my hospital.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Your correspondent "Student" asks, in the August number of the REVIEW, amongst other things, whether supernumerary teeth in the temporary set are ever succeeded by supernumerary teeth in the permanent set, and I am happy on another page to give him a description and, through your courtesy, an illustration of a case answering his question in the affirmative, that has come under my own observation and treatment. If also he will turn to the 'British Journal of Dental Science' for 1873, page 552, he will find a case recorded in which such succession was expected by the dental surgeon who attended the patient to happen; but whether it has happened or not is more than I or he probably—that being a hospital case, and therefore very apt to be lost sight of—can say. The temporary supplemental teeth were, however, apparently identical in position with those in my patient's mouth, and therefore it is quite possible that successors appeared in due course.

I remain, Sir,

Faithfully yours,

W. E. JAMESON.

50 Gloucester-place, Portman-square, W.,

August 31st, 1876.

Educational Department.

THE information contained in the following pages is intended for those who propose taking the Diploma in Dental Surgery of the Royal College of Surgeons of England. Those who prefer seeking also the Membership of the College will obtain all the necessary particulars as to Hospitals, &c., in the Students' Number of the MEDICAL PAPERS for the 16th inst.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

REGULATIONS RELATING TO THE DIPLOMA IN DENTAL SURGERY. EDUCATION.

Candidates are required to produce the following Certificates:—

1. Of being twenty-one years of age.
2. Of having been engaged during four years in the acquirement of professional knowledge;

3. Of having attended, at a School or Schools recognised by this College, not less than one of each of the following Courses of Lectures, delivered by Lecturers recognised by this College, namely :—Anatomy, Physiology, Surgery, Medicine, Chemistry, and Materia Medica.
4. Of having attended a second Winter course of Lectures, on Anatomy, or a course of not less than twenty Lectures on the Anatomy of the Head and Neck, delivered by Lecturers recognised by this College.
5. Of having performed Dissections at a recognised School during not less than nine months.
6. Of having completed a course of Chemical Manipulation, under the superintendence of a Teacher or Lecturer recognised by this College.
7. Of having attended, at a recognised Hospital or Hospitals in the United Kingdom, the Practice of Surgery and Clinical Lectures on Surgery during two Winter Sessions.
8. Of having attended, at a recognised School, two Courses of Lectures upon each of the following subjects, viz.: —Dental Anatomy and Physiology (Human and Comparative), Dental Surgery, Dental Mechanics, and one Course of Lectures on Metallurgy, by Lecturers recognised by this College.
9. Of having been engaged, during a period of not less than three years, in acquiring a practical familiarity with the details of Mechanical Dentistry, under the instruction of a competent Practitioner.
10. Of having attended at a recognised Dental Hospital, or in the Dental department of a recognised general Hospital, the Practice of Dental Surgery during the period of two years.

N.B. The Students of the London Schools are required to register the above Certificates at this College; and special Returns will be required from the Provincial Schools.

Candidates who were in Practice as Dentists, or who had commenced their Education as Dentists prior to September, 1859—the date of the Charter—and who are unable to produce the Certificates required by the foregoing Regulations, shall furnish the Board of Examiners with—

A Certificate of moral and professional character, signed

*by two Members of this College,** together with answers to the following inquiries :—

Name.	Age.	Professional Address.
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If in practice as a Dentist, the date of the commencement thereof.

Whether Member or Licentiate of any College of Physicians or Surgeons of the United Kingdom ; and, if so, of what College.

Whether Graduate of any University in the United Kingdom ; and, if so, of what University ; and whether Graduate in Arts or Medicine.

The date or dates of any such Diploma, Licence, or Degree.

Whether Member of any Learned or Scientific Society ; and if so, of what.

Whether his practice as a Dentist is carried on in connection with any other business ; and, if so, with what business.

Whether, since September, 1859, he has employed Advertisements or public Notices of any kind in connexion with the practice of his Profession.

The particulars of Professional Education, Medical or Special.

The Board of Examiners will determine whether the evidence of character and education produced by a Candidate be such as to entitle him to Examination.

* N.B. In the case of Candidates in practice or educated in Scotland or Ireland, the Certificate of moral and professional character may be signed by two Licentiates of the Royal College of Surgeons of Edinburgh, or the Faculty of Physicians and Surgeons of Glasgow, or of the Royal College of Surgeons in Ireland, as the case may be.

EXAMINATION.

The examination is partly written and partly oral.

The written examination comprises General Anatomy and Physiology, and General Pathology and Surgery, with especial reference to the practice of the Dental Profession.

The oral practical examination comprises the several subjects included in the curriculum of professional education, and is conducted by the use of preparations, casts, drawings, &c.

Members of the College, in the written examination, will only have to answer those questions set by the Section of the Board consisting of persons skilled in Dental Surgery :

and in the oral examination will be examined only by that Section.

A Candidate whose qualifications shall be found insufficient will be referred back to his studies, and will not be admitted to re-examination within the period of six months, unless the Board shall otherwise determine.

Examinations will be held in January and June.

The fee for the Diploma is Ten Guineas, over and above any stamp duty.

NOTE.—*A ticket of admission to the Museum, to the Library, and to the College lectures will be presented to each Candidate on his obtaining the Diploma.*

EDWARD TRIMMER, *Secretary.*

Dental Hospitals.

LONDON DENTAL HOSPITAL AND LONDON SCHOOL OF DENTAL SURGERY.

Dental Officers, and the Days and Hours of Hospital Attendance.

Consulting Physician.—Sir Thomas Watson, Bart., M.D.

Consulting Surgeon.—Mr. Campbell de Morgan.

Consulting Dental Surgeons.—Mr. Samuel Cartwright, F.R.C.S.; Mr. John Tomes, F.R.S.

	<i>Dental Surgeons.</i>	<i>Assist.-Dental Surgeons.</i>
9 a.m. Monday . .	Mr. Fox	Mr. Moon.
„ Tuesday . .	„ Underwood . . .	„ Medwin.
„ Wednesday . .	„ Gregson	„ D. Hepburn.
„ Thursday . .	„ Coleman	„ Lane.
„ Friday . . .	„ T. H. Harding . .	„ Bartlett.
„ Saturday . .	„ Hill	„ S. H. Cartwright.

Administrators of Chloroform.—Monday, Mr. Bailey, M.R.C.S.; Tuesday and Wednesday, Mr. Clover, F.R.C.S., Friday and Saturday, Mr. Braine, F.R.C.S., at 9.30 a.m.

Dental House-Surgeon.—Mr. Merson.

Assistant House-Surgeon—Mr. Bell.

DEMONSTRATIONS.

The Medical Officers will make every effort to give Demonstrations to the junior pupils, on cases selected from time to time, every morning during the Lecture Session; and at the end of the Course, those gentlemen who have attended the Demonstrations to the satisfaction of the Medical Officers will be permitted to perform operations at the Hospital under the supervision of the Medical Officers and the House-Surgeon. Those of the senior Students who can spare the time will also be very welcome to attend; but it is requested that the juniors whose names are on the list of the surgeons of the day will be allowed the best places for seeing the Demonstrations.

The Demonstrations will be given on Monday by Mr. Fox, at 9.15, and by Mr. Moon, at 10. Tuesday, by Mr. Underwood, at 9.30, and

by Mr. Medwin, at 10. Wednesday, by Mr. Gregson, at 9.15, and by Mr. Hepburn, at 10. Thursday, by Mr. Coleman, at 9.30, and by Mr. Lane, at 10. Friday, by Mr. Bartlett, at 9, and by Mr. Harding, at 9.30. Saturday, by Mr. Hill, at 9.30, and Mr. Hamilton Cartwright, at 10.

LONDON SCHOOL OF DENTAL SURGERY.

LECTURES.

DENTAL SURGERY AND PATHOLOGY.

Mr. Samuel Hamilton Cartwright, M.R.C.S., L.D.S.

Inflammation.—Its Nature, Pathology, and Symptoms. Its important bearing in relation to Dental Surgery. Various examples of its action in connection therewith. The phenomena of reflex pain and action explained.

The First Dentition.—Local and constitutional maladies occurring synchronously with that period. The effects of Struma, Syphilis, &c., upon Dentition. Diseases connected with the temporary Teeth. Their management considered in relation to the coming permanent Dentine.

The Second Dentition.—The chief forms of temporary and permanent irregularity. Their Causes and Treatment.

Caries, and Special Diseases of the Teeth and Tissues connected therewith.—Its Pathology in connection with various theories on the development of tissues. The Vital, Chemical, and Chémico-Vital explanations of decay. Its Treatment, constitutional and local. The operation of filling considered under all its different relations. Diseases of the Pulp and the surrounding tissues of the Teeth, and their treatment. Effects of Mercury, Rheumatism, Syphilis, &c., on the soft and hard structure connected with the Teeth. Necrosis. Exostosis. Absorption. Denudation. Salivary Calculus. Abnormal conditions of the Mucous Membrane of the Mouth. Hypertrophy, Epulis, &c. Diseases of the Antrum. Dentigerous Cysts. Odontomes. Extraction of Teeth. Replantation.

Oral Surgery.—Tumours of the Maxille generally considered. Dislocation and Fractures of the Jaw. Diseases connected with the Salivary Ducts. Necrosis and Caries of Bone. Hare-lip. Perforations of Hard Palate, Cleft Palate. Neuralgia, &c. Therapeutic action of drugs used in Dental Surgery.

These Lectures will be delivered on the mornings of Tuesday and Thursday, at Eight o'clock, during the months of May and June. Recent Specimens, Preparations, Models, Drawings, &c., will be used to illustrate the Lectures.

DENTAL ANATOMY AND PHYSIOLOGY.

(*Human and Comparative.*)

Mr. C. S. Tomes, M.A., M.R.C.S., L.D.S.

General Scope of Odontology.—General characters of Teeth, as to composition, form, position, &c.

The Dental Tissues.—Enamel. Distribution of, peculiar modification of, &c. Dentine, structure, &c., relation of to Bone, Vaso-dentine and Osteo-dentine. Cementum. Structure, distribution, &c. Dental Pulp, structure, modification in advanced age, &c.

The Development of Teeth.—General account of, as seen in Fish, Reptiles, and Mammals. Special modifications in particular groups. Relation of modern views to those held by Goodsir, &c.

The Development of the Jaws.—Their bearing upon irregularities of the Teeth.

The Attachment of the Teeth.—By Membrane, by Anchylosis, by Implantation in sockets. The relation existing between these three methods.

The Teeth of Man.

Anatomy of Chief Associated Parts.

An outline (so far as time may allow) of the dentition of other Vertebrates.

Causes operating to modify an animal's dentition.—(1) Inheritance ; (2) Armament for sexual warfare ; (3) Provision for capture and comminution of food.

Fish.—Examples of typical dentitions.

Reptiles.— Ditto

Mammals.— Ditto Examples of extreme modifications for particular purposes. Character of Marsupial dentition ; of Carnivorous, Insectivorous, Rodent, and Herbivorous dentitions.

These Lectures will be delivered on the mornings of Wednesday and Saturday, at Eight o'clock, during the months of May and June. This course will be illustrated by Preparations, Diagrams, and Microscopic Examinations.

MECHANICAL DENTISTRY.

Mr. J. S. Turner, M.R.C.S., L.D.S.

Comprising the preparation of the Mouth for Artificial Teeth, Impression-taking in Wax Composition and Plaster of Paris. Mould-making in Plaster and Metal. Bites or Articulations. The Metals used in Dentistry. Gold-melting, Refining, and Alloying. Plate-making. Artificial Teeth, their qualities and arrangement. How to work Tube and Pin Teeth. Vulcanite, its nature and preparation. Making Vulcanite Cases. Making Pivots. Mounting Spiral Springs. Regulation Plates. Dr. N. Kingsley's Method of making Soft Rubber Obturators.

This Course is illustrated by Diagrams and practical Demonstrations.

These Lecturers will be delivered on the evenings of Wednesday, at Seven o'clock, during the months of October, November, and December.

METALLURGY IN ITS APPLICATION TO DENTAL PURPOSES.

Mr. G. H. Makins, M.R.C.S., F.C.S.

The Lectures delivered in this Course, while embracing, as far as possible, the subject generally, will be devoted more particularly to those metals useful in Dental practice.

The general properties of the Metallic bodies will first be examined, and also their Clinical relations to the non-Metallic. Some consideration will then be given to heating appliances, and to the nature and uses of Gaseous and Solid Fuels. After these the metals will be sepa-

rately treated of, commencing with the noble, and ending with the base metals.

Throughout the Course, such Chemical and Mechanical points as may bear upon the Student's pursuits will be treated of, and methods of analysis detailed.

These Lectures will be delivered on the evenings of Tuesday and Friday, at Half-past Six o'clock, during the months of October and November.

GENERAL FEE FOR THE SPECIAL LECTURES AND HOSPITAL PRACTICE
REQUIRED BY THE CURRICULUM.

Dental Anatomy, Dental Surgery, and Mechanical Dentistry, Two Courses. Metallurgy, One Course, £15 15s.

FEES TO SINGLE COURSES.

Dental Anatomy and Physiology, one Course £3 3s.—Two Courses, £5 5s. Dental Surgery, one Course, £3 3s.—Two Courses, £5 5s. Dental Mechanics, one Course, £3 3s.—Two Courses, £5 5s. Metallurgy, one Course, £3 3s.—Two Courses, £5 5s. Fee for the Two Years' Practice of the Hospital required by the Curriculum, £15 15s.

Total Fee for the Special Lectures and Hospital Practice required by the Curriculum, £31 10s.

Students who perform Operations for Filling Teeth must provide their own Instruments for the same.

Further particulars may be obtained on application to the Dental Officer of the day; or the Treasurer, Mr. S. Cartwright; or the Dean, Mr. T. A. Rogers.

RULES AND REGULATIONS

To be observed by Students of the Hospital.

1. Students entering the practice of this Hospital shall (unless exempted for special reasons) do so upon the understanding that it is their intention to obtain the Dental Diploma of the Royal College of Surgeons of England. Before commencing their course of Studies they must sign their names as willing to conform to this rule and the following regulations:—

2. Students must attend the Hospital daily (except Sunday) at 9 o'clock a.m., and upon entering the Hospital must sign their names in the Attendance Books. The attendance of Students will be submitted monthly to the Medical Committee, and no Schedules will be signed unless their attendance on Hospital Practice and at Lectures has been satisfactory.

3. No Student shall undertake any operation until he has attended a Course of Demonstrations to the satisfaction of the Medical Officers. When permitted to undertake operations for filling teeth, he must provide the instruments requisite for the same. For all cases of gold filling, permission must be obtained of a Medical Officer.

4. No Student shall, under any circumstances, receive fee or remuneration from any Patient attending, or to whom he may become known whilst attending the Hospital, and no mechanical work in the

form of artificial teeth shall be supplied to a Patient by a Student of the Hospital.

5. Students must be punctual in their appointments with Patients; when otherwise, cases previously under their care will be entrusted to other Students by the Medical Officers.

6. No Student shall make use of the same Operating Chair for Patients consecutively whilst other Students are unoccupied for want of the same.

7. All instruments and appliances the property of the Hospital shall, after having been used by a Student, be returned cleansed to their proper places.

8. Students must consider themselves strictly under the control of the Medical Officers of the Hospital. All unnecessary conversation must be avoided, and quietude and gentlemanly bearing before the patients observed.

9. Any exemption from fully carrying out Rules 1, 2, and 3, can only be obtained from the Medical Committee upon grounds that may appear to them good and proper for granting such exemption.

NATIONAL DENTAL HOSPITAL, GREAT PORTLAND STREET.

The practice of this Hospital is recognised by the Royal College of Surgeons, for the Dental Diploma. The Hospital is open daily (Sundays excepted) for the reception of patients, at 9 a.m. Fee for two years' attendance on the practice of the Hospital, as required by the Curriculum of the College of Surgeons, £12 12s.

Hospital Staff.

Consulting Physicians.—F. W. Pavy, M.D.; B. W. Richardson, M.D., F.R.S.

Consulting Surgeons.—Professor Erichsen, F.R.C.S.; T. Spencer Wells, F.R.C.S.

Consulting Dental Surgeon.—J. Merryweather, F.R.C.S.

Dental Surgeons.

Assistant Dental Surgeons.

Monday . . Mr. A. Hockley, L.D.S.

Tuesday . . Mr. Oakley-Coles, L.D.S. . . Mr. J. Stocken, L.D.S.

Wednesday . Mr. G. Williams, L.D.S. . . Mr. C. E. White, L.D.S.

Thursday . . Mr. A. F. Canton, L.D.S.

Friday . . Mr. H. T. Kempton, L.D.S. . Mr. Thos. Gaddes, L.D.S.

Saturday . . Mr. H. Rose, L.D.S.

DENTAL DISPENSARY, CATHERINE STREET, PLYMOUTH.

Physician.—C. Albert Hingston, Esq., M.D. London.

Surgeon.—Warren J. Isbell, Esq., L.R.C.P. Edin., F.R.C.S.

Consulting Dentist.—Stratton J. Coles, Esq.

Dentists.—F. A. Jewers, Esq.; W. V. Moore, Esq., D.L.R.C.S.; C. Spence Bate, Esq., F.R.S., D.L.R.C.S.; Francis H. Balkwill, Esq., D.L.R.C.S.

Treasurer.—Alfred Payne Balkwill, Esq.

Hon. Sec.—E. Gasking Bennett, Esq.

The Dentists attend at 9 o'clock on Mondays Wednesdays, Thursdays, and Saturdays, to stop, regulate, or extract teeth, or to adopt such other course as the necessity of the case may suggest.

DENTAL SCHOOL.

Certificates of attendance on the practice of this Dental Dispensary are recognised by the College of Surgeons as qualifying for the Diploma in Dental Surgery. The College will also recognise lectures delivered at the Dental Dispensary, Plymouth. Pupils of any of the Dental Surgeons of the Plymouth Dental Dispensary, or other Dentists holding a Diploma of the College of Surgeons, or Member of the Odontological Society, may attend the Dispensary on the day of such practitioner as may agree to accept such pupil or pupils, on the payment of £1 1s. per annum to the institution.

General Hospitals.

CHARING CROSS.

By JOHN FAIRBANK, M.R.C.S., Dental Surgeon to the Hospital.

The Charing Cross Hospital Medical School is one of the recognised Schools of Dental Surgery, and is in close proximity to the Dental Hospital.

The Course of Lectures on Dental Surgery includes the Structure, Development, and Eruption of the Temporary and Permanent Teeth; the Method of treating and avoiding Irregularities; Diseases of the Teeth and their treatment; also the mechanical treatment of Cleft Palate, and other Imperfections of the Jaws.

The Lectures are illustrated by Models and Diagrams.

Frequent Examinations are held in each Class; and only those Pupils who have regularly attended them, as well as the Lectures, will be admitted to compete for the Scholarships, Medals, and Certificates of Honour, awarded at the end of the Session.

Practical Instruction in Dental Surgery is given three times a week by Mr. Fairbank at the Hospital.

Composition Fee for Dental Surgery, £42 2s.

GUY'S HOSPITAL MEDICAL AND SURGICAL SCHOOL.

Dental Surgeon—J. Salter, Esq., F.R.S. Assistant Dental Surgeon, H. Moon, Esq.

Practical instruction in Dental Surgery is given every Tuesday, Thursday, and Friday, at 12 o'clock.

Dental Surgery.—H. Moon, Esq., during summer session.

In the Dental Department, besides the ordinary cases of affections of the Teeth, the surgeon constantly has under treatment patients suffering from cleft palate and other deformities of the jaws, and the Assistant Surgeon gives practical demonstrations and special instruction in the various branches of Dental Surgery.

KING'S COLLEGE, LONDON.

Dental Surgeon — Professor S. Hamilton Cartwright, M.R.C.S., L.D.S.

Students in Dental Surgery are divided into two Classes :—

1. Those who, having attended the Course of Study required for qualifying as a Medical Practitioner, afterwards take up the Special Courses of Dentistry, at an additional cost of Thirty Guineas.

The Special Course of Dentistry includes Lectures on Dental Anatomy and Physiology, Dental Surgery, Mechanics, and Metallurgy, and two years of Dental Hospital practice.

2. Those who only take up the Curriculum required by the College of Surgeons for their Dental Diploma. Such Students must attend two Courses of Anatomy, one of Physiology, Chemistry, Medicine, Surgery, Materia Medica, Practical Chemistry; and two Winter Sessions of Surgical Practice; also the Special Course of Dentistry.

The charge for these Students, including Matriculation Fees, is £95 1s. 6d. if paid in one sum on entrance; or £100 if paid by the following instalments, viz.: £60 on entrance; and £40 at the beginning of the Second Winter Session.

Dental Anatomy and Physiology	}	No time fixed.
Dental Surgery		
Dental Mechanics		
Metallurgy		

Professor Cartwright will give Clinical Lectures on alternate Tuesdays during Winter Session.

Practical instruction in Dental Surgery is given three times a week by the Dental Surgeon and Assistant-Dental Surgeon at the Hospital.

LONDON HOSPITAL AND MEDICAL COLLEGE.

Dental Surgeon.—A. W. Barrett, M.B. Lond., M.R.C.S.

Dental Department.—Mr. Barrett gives practical instruction on Tuesdays at 9 a.m., which is open to all students of the school and hospital, and can be attended by gentlemen who are not pupils. Mr. Barrett will be always glad to receive applications from those desirous of holding the office of Dental Assistant. The attention of Dental students is particularly directed to the fact that the Council of the College of Surgeons recognise the Dental department of the London Hospital as a school at which may be obtained the dental practice necessary to qualify a student for the examination for the Dental Diploma. Dental students may also obtain the general medical education and the dental practice necessary for the diploma, at the London Hospital School, on very advantageous terms.

Anatomy and Pathology of the Teeth, and Dental Surgery.—A. W. Barrett, M.B. Lond., M.R.C.S. Eng., Surgeon-Dentist to the Hospital. This course will be delivered on days which will be duly announced.

Fee for Dental students, £42; for two years' Dental practice, £10 10s.

MIDDLESEX HOSPITAL.

Consulting Dental Surgeon.—J. Tones, Esq., F.R.S.

Dental Surgeon.—J. Turner, Esq., M.R.C.S., L.D.S.

Fees for the Lectures required by the Royal College of Surgeons, forty guineas, either in one payment or by instalments of twenty-five guineas on entrance, and fifteen guineas at the beginning of the Second Winter Session. Pupils receive instructions on Diseases of the Teeth and the Operations connected with them, daily at 9 a.m. Fee, £5 5s. Further information may be obtained from Dr. King.

ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.

Dental Surgery and Pathology, by Alfred Coleman, Licentiate in Dental Surgery; Dental Surgeon to the hospital, and to the Dental Hospital of London. The lectures included in this course will be adapted to the requirements of students generally, as well as of those qualifying them-

selves for the Dental Diploma of the Royal College of Surgeons.

The subjects treated of in this course will be the following :—

- I. The First Dentition—Conditions Normal and Abnormal—Period of Eruption of the Temporary Teeth.
Diseases peculiar to the Temporary Teeth—Treatment of same—Absorption of the Temporary Teeth—Conditions interfering with the same.
- II. The Second Dentition—Irregularities in the Permanent Teeth, in Form, Size, Number, and Position—Treatment of Irregularities in Position.
Diseases of the Permanent Teeth—Caries, its Nature and Treatment—Operations for Plugging or Filling Teeth—Necrosis, Exostosis, &c.
- III. Diseases of other structures and organs dependent upon or connected with Diseased Teeth such as alveolar abscess, necrosis of alveoli, alveolar hæmorrhage, tumours, ulcers, glandular diseases, fistulæ, closure of jaws by cicatrices.

The lectures (free to all general students of the hospital) will be illustrated by diagrams, as well as by pathological and microscopic preparations.

Friday, at 10.30 a.m., during the months of October, November, and December.

These lectures are recognised by the Royal College of Surgeons as a course of lectures on Dental Surgery required for obtaining the dental diploma of that body.

Fee for general subjects for students of Dental Surgery : First Winter, £26 5s. ; First Summer, £26 5s. ; or a single payment of £52 10s.

Dental Surgery (free to all general students of the hospital)—One course, £2 2s. ; unlimited, £3 3s.

ST. GEORGE'S HOSPITAL.

Dental Surgeon.—Charles Vasey, L.D.S. Mr. Vasey attends at the Hospital on Tuesdays and Saturdays from 9 to 10, and on Thursdays at 1 o'clock. Lectures on Dental Surgery are given by Mr. Vasey in the Summer Session. Fee, £1 1s. Gentlemen will be admitted to the lectures and Hospital practice required for the Diploma in Dental Surgery by one payment of £45.

ST. MARY'S HOSPITAL MEDICAL SCHOOL.

Dental Surgeon.—H. Howard Hayward, M.R.C.S., L.D.S.

Practical instruction in Dental operations is given on Wednesdays and Saturdays at 9.30 a.m. Also a special course of lectures in Dental Surgery. Fee for the course, £2 2s.

ST. THOMAS'S HOSPITAL.

Medical and Surgical College.—Session 1875—1876.

Dental Surgeon.—Mr. J. W. Elliott.

Assistant Dental Surgeon.—Mr. W. G. Ranger.

Fee for general subjects required for students of Dental surgery for two years £45, or by instalments of £40 for the first year, and £10 for the second year.

All students have the opportunity afforded them of being engaged in the performance of practical duties in connection with the medical, surgical, obstetrical, ophthalmic and pathological departments of the hospital.

The museums of anatomy and pathology, and of materia medica and chemistry, are open to the students.

Students have access to the library on payment of a fee of £1 1s. for the whole period of their studies at the hospital.

Laboratories, under the direction of the physiological and chemical lecturers, are provided, and students availing themselves of them are required, for the use of materials, to pay a fee of One Guinea and a-half for the course of practical physiology, and the same sum for the course of practical chemistry.

UNIVERSITY COLLEGE HOSPITAL.

Dental Surgeon.—G. A. Ibbetson, F.R.C.S., L.D.S., Lecturer on Dental Anatomy and Physiology, will give a course of twelve lectures at University College on Tuesdays and Thursdays at 5 p.m., beginning in January. Fee, £2 2s. These lectures are recognised by the Royal College of Surgeons for the Diploma in Dental Surgery.

WESTMINSTER HOSPITAL.

Dental Surgeon.—J. WALKER, M.D., M.R.C.S.

LECTURERS.—Mr. Walker, Dental Surgery ; Dr. Dupré,

F.R.S., Metallurgy ; Dr. Allchin, Dental Anatomy and Histology.

October 4 to March 31.—Dental Surgery, Mr. Walker (in Oct., Nov., and Dec.), on Wednesdays at 9.30. Metallurgy, Dr. Dupré (in Jan., Feb., and Mar.), on Tuesdays at 4.0. Dental Anatomy and Physiology, Dr. Allchin, on Wednesdays at 4.0.

FEES FOR DENTAL STUDENTS.—The Fees for the *general* Surgical Practice and Lectures required for the Dental Diploma of the Royal College of Surgeons, are as follow :—

	1st Session.	2nd Session.	3rd Session.
	£ s. d.	£ s. d.	£ s. d.
Surgical Practice and Clinical Lectures (two winters)	8 8 0	...	4 4 0
Anatomy and Dissections	7 7 0	...	2 2 0
Physiology	5 5 0	...	...
Chemistry	5 5 0	...	...
Materia Medica ... ..	...	3 3 0	...
Practical Chemistry (with materials) ... ..	...	3 3 0	...
Medicine ... ..	...	...	5 5 0
Surgery ... ..	...	...	5 5 0
	26 5 0	6 6 0	16 16 0
Deduct Composition to General Students	1 15 0	0 11 0	1 6 0
Total : in three payments, one at the commencement of each of the first three Sessions	24 10 0	5 15 0	15 10 0
Or in two payments, one at the commencement of each Academic Year	27 10 0	...	15 10 0
Or in one sum on entrance (not perpetual)	38 0 0	...	...

Students who become general Dental Students, as above, may enter for their special practice and lectures at the Dental Hospital in Leicester-square, within easy reach of the hospital, where there are great advantages for the study of Practical Dentistry ; or they may enter for the whole of their special lectures at the Westminster Hospital Medical School—in the latter case entering for the Practice only of the Dental Hospital.

The special fees for Dental Students at the Westminster Hospital are :—For the Lectures, including Metallurgy,

Dental Mechanics, Dental Surgery and Pathology, and Dental Anatomy and Physiology, in one sum on entrance, £14 14s. This payment is perpetual.

The Courses required for the Dental Licence of the College of Surgeons are one course of Metallurgy, and two of each of the other three.

Dental Department.—The Dental Surgeon, Mr. Walker, attends at 9.15 a.m. on Wednesdays and Saturdays. The Lectures on Dental Surgery, given during October, November, and December, are, together with the practice of the Department, free to Students of the Hospital, unless a Certificate be required.

Dental Surgery.—J. Walker, M.R.C.S. and L.D.S., Dental Surgeon to the Hospital. Wednesdays, at 9.30 a.m. (in Oct., Nov., and Dec.). This course of Lectures will include the Development and Microscopic Characters of the teeth. The eruption of the temporary and permanent Teeth, with incidental Diseases. The mode of treating and avoiding Irregularities of the permanent Teeth. Diseases of, and Operations on, the Teeth.

The lectures will be illustrated by Models, Specimens, and Diagrams.

Fees: One Course, Two Guineas; Two Courses, Three Guineas. Free to Students of the Hospital, unless a Certificate is required.

Dental Anatomy and Physiology.—W. H. Allechin, M.B. Lond., M.R.C.P., Lecturer on Histology. Wednesday, at 4 p.m. in the Physiological laboratory. This course will comprise the development, characters, and structure of teeth, and the development of the jaws in man, as compared with the same in animals.

Fees: One Course, Two Guineas; Two Courses, Three Guineas.

Dental Mechanics.—, Dental Surgeon to the Hospital. Hours not yet fixed. This course will include all the mechanical work required in practical Dentistry, and will be illustrated by diagrams and practical demonstrations.

Fees: One Course, Three Guineas; Two Courses, Five Guineas.

Metallurgy in its Application to Dental Purposes.—August Dupré, Ph.D., F.R.S., F.C.S., Lecturer on Chemistry. Tuesdays at 4 p.m. (in January, February, and March).

This course of Lectures will include the general properties of the Metals, the special characters of those used in Dental practice, heating appliances, modes of manipulation, and methods of analysis.

Fees: One Course, Three Guineas; Two Courses, Five Guineas.

Royal College of Surgeons of England.

REGULATIONS RESPECTING THE EDUCATION AND EXAMINATION OF
CANDIDATES FOR THE DIPLOMA OF MEMBER OF THIS COLLEGE.

SECTION I.

Preliminary General Education and Examination.

I. Candidates who commenced their Professional Education on or after the 1st of January, 1861, will be required to produce one or other of the following Certificates :—

1. Of Graduation in Arts at a University recognised for this purpose.

The following are the Universities at present recognised, viz. :

Oxford; Cambridge; Dublin; London; Durham; Queen's University in Ireland; Edinburgh; Glasgow; Aberdeen; and St. Andrew's.

Calcutta; Madras; and Bombay.

Canada.—McGill College, Montreal; and Queen's College, Kingston.

2. Of having passed an Examination for Matriculation, or such other Examination as shall, in either case, from time to time be sanctioned by the Council of this College, at a University in the United Kingdom, or at a Colonial or Foreign University recognised by the Council of this College.

The following are the Examinations at present recognised under this Clause (No. 2), viz. :—

Oxford.—Responsions or Moderations.

Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

Cambridge.—Previous Examination.

Cambridge.—Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

Oxford and Cambridge.—“Schools Examination Board,” the Certificates to include the several subjects required in the preliminary Examination of the College.

Dublin.—Entrance Examination.

London.—Matriculation Examination.

Durham.—Examination of Students in Arts in their second and first years.

Middle-Class Examinations, Senior, the Certificates to include Latin and Mathematics.

Registration Examination for Medical Students.

Queen's University in Ireland.—Two years' Arts Course for Diploma of Licentiate in Arts.

Preliminary Examinations at end of B.A. Course.

Middle-Class Examinations, the Certificates to include Latin and Mathematics.

Matriculation Examinations.

Edinburgh ; Aberdeen ; Glasgow ; and St. Andrew's.—Preliminary or Extra Professional Examinations for Graduation in Medicine.

Calcutta ; Madras ; and Bombay.—Matriculation Examinations.

Canada ; Queen's College, Kingston.—Matriculation Examination, Preliminary Examination of Students in Medicine ; McGill College, Montreal ; Bishop's College, Montreal ; University College, Toronto ; University of Trinity College, Toronto ; Victoria College, Toronto ; University of Laval, Quebec.—Matriculation Examinations.

Nova Scotia ; King's College, Windsor.—Matriculation Examination.—Responsions. New Brunswick ; Fredericton.—Matriculation Examination ; Dalhousie College and University, Halifax.—Matriculation Examination.

Australia ; Melbourne.—Matriculation Examination, with a Certificate that the Student has passed an Examination in Latin. Sydney ; Matriculation Examination. Adelaide ; South Australian Institute.

University of the Cape of Good Hope.—Matriculation Examination.

New York ; Bellevue Hospital Medical College.—Matriculation Examination.

3. Of having passed the Preliminary Examination for the Fellowship of this College.
4. Of having passed the Preliminary Examinations of the Royal Colleges of Surgeons in Ireland and of Edinburgh, or of the Faculty of Physicians and Surgeons of Glasgow.
5. Of having passed the Examination in Arts of the Society of Apothecaries of London, or of the Apothecaries' Hall of Ireland.
6. Of having passed the First-Class Examination of the College of Preceptors.
7. Of having obtained the Testamur of the Codrington College, Barbadoes.
8. Of having obtained the Degree of Associate of Arts granted by the Tasmanian Council of Education, with a Certificate that the Student has been examined in Latin and Mathematics.
9. Of having passed the Voluntary Examinations of Christ's College, Canterbury, New Zealand, the Certificate to include all the subjects required from time to time in the Preliminary Examination of the College.

II. Candidates who shall not be able to produce one or other of the foregoing Certificates will be required to pass an Examination, in English, Classics, and Mathematics, conducted by the Board of Examiners of the College of Preceptors, under the direction and supervision of this College.

The following are the subjects of the Examination referred to in the foregoing paragraph for December, 1874, and until further notice, viz :—

PART I.

COMPULSORY SUBJECTS.

1. Writing from Dictation.
2. English Grammar.
3. Writing a short English composition ; such as a description of a place, an account of some useful or natural product, or the like.
4. Arithmetic. No Candidate will be passed who does not show a competent knowledge of the first four rules, simple and compound, of Vulgar Fractions, and of Decimals.
5. Questions on the Geography of Europe, and particularly of the British Isles.
6. Questions on the outlines of English History, that is, the succession of the Soverigns and the leading events of each reign.
7. Mathematics. Euclid, Books I. and II., or the subjects thereof ; Algebra to Simple Equations inclusive.
8. Translation of a passage from the second book of Cæsar's Commentaries, "De Bello Gallico."

PART II.

OPTIONAL SUBJECTS.

Papers will also be set on the following six subjects ; and each Candidate will be required to offer himself for examination on one subject at least, at his option ; but no Candidate will be allowed to offer himself for examination on more than four subjects :—

1. Translation of a passage from the first Book of the Anabasis of Xenophon.
2. Translation of a passage from X. B. Saintine's "Picciola."
3. Translation of a passage from Schiller's "Wilhelm Tell."

Besides these Translations into English, the Candidates will be required to answer questions on the Grammar of each subject, whether compulsory or optional.

4. Mechanics. The questions will be chiefly of an elementary character.
5. Chemistry. The questions will be on the elementary facts of Chemistry.
6. Botany and Zoology. The questions will be on the classification of Plants and Animals.

The quality of the handwriting and the spelling will be taken into account.

N.B.—Each Candidate [*who has not at a previous Examination paid the amount*] is required to pay a Fee of £2 on the morning of the first day of the Examination prior to his admission thereto. The next Examination will be held in December. The exact dates of the Examination will be duly advertised, when fixed, in the Journals. Candidates are required to send in the prescribed forms of application not less than three weeks before the commencement of the Examination.

Note.—A Candidate in order to qualify for the Fellowship is required, in addition to the subjects included in Part I., to pass in Greek

and in French or German, and in one at his option of the remaining subjects in Part II.

SECTION II.

Professional Education.

- I. Professional Studies prior to the date at which the Candidate shall have passed an Examination in General knowledge in conformity with the Regulation in the preceding Section are not recognised.
- II. The following will be considered as the commencement of Professional Education :—
 1. Attendance on the Practice of a Hospital, or other Public Institution recognised by this College for that purpose.
 2. Instruction as the Pupil of a legally qualified Surgeon holding the appointment of Surgeon to a Hospital, General Dispensary, or Union Workhouse, or where such opportunities of practical instruction are afforded as shall be satisfactory to the Council.
 3. Attendance on Lectures on Anatomy, Physiology, or Chemistry, by Lecturers recognised by this College.

The commencement of professional study, otherwise than by attendance on Lectures in recognised Medical Schools, or by attendance on the Practice of recognised Hospitals, will not be admitted until a Certificate thereof shall be furnished to the Secretary for registration at the College, by the Practitioner whose Pupil the Candidate shall have become, or by the Medical Superintendent of the Hospital or other Institution to the practice of which he shall have entered, and will, consequently, date only from the reception of such Certificate by the Secretary; the Certificate to be accompanied by proof of having passed the Preliminary Examination in General Knowledge.

III. Candidates will be required to produce the following Certificates, viz. :—

1. Of being twenty-one years of age.
2. Of having been engaged, subsequently to the date of passing the Preliminary Examination, during four years, or during a period extending over not less than four Winter and four Summer Sessions, in the acquirement of professional knowledge.
3. Of having attended Lectures on Anatomy during two Winter Sessions.
4. Of having performed Dissections during not less than two Winter Sessions.
5. Of having attended Lectures on General Anatomy and Physiology during one Winter Session.
6. Of having attended a Practical Course of General Anatomy and Physiology during another Winter or a Summer Session, consisting of not less than thirty meetings of the Class.

Note A.—By the Practical Course referred to in Clause 6, it is meant that the learners themselves shall, individually, be engaged in the necessary experiments, manipulations, &c.; but it is not hereby intended that the learners shall perform vivisections.

7. Of having attended Lectures on Surgery during one Winter Session.

8. Of having attended a Course of Practical Surgery during a period occupying not less than six months prior or subsequent to the Course required by the preceding Clause 7.

Note B.—The Course of Practical Surgery referred to in Clause 8 is intended to embrace instruction in which each Pupil shall be exercised in practical details, such as in

The Application of Anatomical facts to Surgery, on the living person, or on the dead body.

The methods of proceeding and the manipulations necessary in order to detect the effects of diseases and accidents, on the living person, or on the dead body.

The performance, where practicable, of the operations of Surgery on the dead body.

The use of Surgical Apparatus.

The examination of diseased structures, as illustrated in the contents of a museum of Morbid Anatomy and otherwise.

9. Of having attended one Course of Lectures on each of the following subjects, viz. :—

Chemistry.

Materia Medica.

Medicine.

Forensic Medicine.

Midwifery (with practical instruction, and a certificate of having personally conducted not less than ten labours).

Pathological Anatomy during not less than three months.

Note C.—The Course of Lectures on Chemistry included in Clause 9 will not be required in the case of a Candidate who shall have passed a satisfactory Examination in this subject in his Preliminary Examination.

10. Of having studied Practical Pharmacy during three months.

11. Of having attended a three months' course of Practical Chemistry (with manipulations), in its application to Medical Study.

12. Of instruction and Proficiency in the Practice of Vaccination.

Note D.—In the case of Candidates who commenced their Professional Education on or after the 1st of October, 1868, the Certificate of Instruction in Vaccination will only be received from recognised Vaccine Stations, or from recognised Vaccine Departments in Medical Schools or Hospitals, or other Public Institutions, where the appointed Teacher of Vaccination is not liable to frequent change, and where ample means for study are provided for not less than such a number of cases (eight or ten on an average weekly), as may be found, after due inquiry, to be sufficient for this purpose at each place.

Note E.—The Certificates of attendance on the several Courses of Lectures must include evidence that the Student has attended the Practical Instructions and Examinations of his Teacher in each Course.

13. Of having attended, at a recognised Hospital or Hospitals, the Practice of Surgery, during three Winter* and two Summer† Sessions.

* The Winter Session comprises a period of six months, and, in England, commences on the 1st of October and terminates on the 31st of March.

† The Summer Session comprises a period of three months, and, in England, commences on the 1st of May and terminates on the 31st of July.

14. Of having been individually engaged, at least twice in each week, in the observation and examination of Patients at a recognised Hospital or Hospitals, under the direction of a recognised Teacher, during not less than three months.

Note F.—It is intended that the Candidate should receive instruction required by Clause 14 at an early period of his attendance at the Hospital.

15. Of having, subsequently to the first Winter Session of attendance on Surgical Hospital Practice, attended at a recognised Hospital or Hospitals, Clinical Lectures on Surgery, during two Winter and two Summer Sessions.
16. Of having been a Dresser at a recognised Hospital, or of having, subsequently to the completion of one year's professional education, taken charge of Patients under the Superintendence of a Surgeon during not less than Six months, at a Hospital, General Dispensary, or Parochial or Union Infirmary recognised for this purpose, or in such other similar manner as, in the opinion of the Council, shall afford sufficient opportunity for the acquirement of Practical Surgery.
17. Of having attended during the whole period of attendance on Surgical Hospital Practice (see Clause 13) demonstrations in Post-Mortem Rooms of a recognised Hospital.
18. Of having attended, at a recognised Hospital or Hospitals, the Practice of Medicine, and Clinical Lectures on Medicine, during one Winter and one Summer Session.

NOTICE.—Clauses 6, 8, 11, 14, and 17, and Notes A, B, C, E, and F, together with the Courses of Lectures on Forensic Medicine and Pathological Anatomy, mentioned in Clause 9, are applicable to Candidates who commenced their Professional education on or after the 1st of October, 1870.

N.B.—Blank Forms of the required Certificates may be obtained on application to the Secretary, and all necessary Certificates will be retained at the College.

SECTION III.

- I. Certificates will not be received on more than one branch of Science from one and the same Lecturer ; but Anatomy and Dissections will be considered as one branch of Science.
- II. Certificates will not be recognised from any Hospital in the United Kingdom unless the Surgeons thereto be members of one of the legally constituted Colleges of Surgeons in the United Kingdom ; nor from any School of Anatomy and Physiology or Midwifery, unless the Teachers in such School be members of some legally constituted College of Physicians or Surgeons in the United Kingdom ; nor from any School of Surgery, unless the Teachers in such School be members of one of the legally constituted Colleges of Surgeons in the United Kingdom.
- III. No Metropolitan Hospital will be recognised by this College which contains less than 150, and no Provincial or Colonial Hospital which contains less than 100 Patients.
- IV. The recognition of Colonial Hospitals and Schools is governed by the same regulations with respect to number of Patients and to Courses of Lectures, as apply to the recognition of Provincial Hospitals and Schools in England.

V. Certificates of Attendance upon the practice of a recognised Provincial or Colonial Hospital unconnected with, or not in convenient proximity to, a recognised Medical School, will not be received for more than one Winter and one Summer Session of the Hospital Attendance required by the Regulations of this College; and in such cases Clinical Lectures will not be necessary, but a Certificate of having acted at Dresser for a period of at least six months will be required.

VI. Certificates will not be received from Candidates who have studied in London, unless they shall have registered at the College their cards of admission to attendance on Lectures and Hospital Practice within fifteen days from the commencement of the Session; nor from Candidates who have studied in the Provincial Schools in England, unless their names shall be duly returned from their respective Schools.

N.B.—At their first registration in October, Candidates will be required to produce a Certificate of having passed one or other of the Preliminary Examinations in General Knowledge recognised by the College.

VII. Those Candidates who shall have pursued the whole of their studies in Scotland or Ireland will be admitted to examination upon the production of the several Certificates required respectively by the College of Surgeons of Edinburgh, the Faculty of Physicians and Surgeons of Glasgow, and the College of Surgeons in Ireland from Candidates for their Diploma, together with a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge; and in the case of Candidates who shall have pursued the whole of their studies at recognised Foreign or Colonial Universities, upon the production of the several Certificates required for their Degree by the Authorities of such Universities, together with a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

VIII. Members or Licentiates of any legally constituted College of Surgeons in the United Kingdom, and Graduates in Surgery of any University recognised for this purpose by this College, will be admitted to examination on producing their Diploma, Licence, or Degree, together with proof of being twenty-one years of age, a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

- IX. Graduates of Medicine of any legally constituted College or University recognised for this purpose by this College, will be admitted to examination on adducing, together with their Diploma or Degree, proof of being twenty-one years of age, a Certificate of instruction and proficiency in the practice of Vaccination, and satisfactory evidence of having been occupied, subsequently to the date of passing the Preliminary Examination, at least four years, or during a period extending over four Winter and four Summer Sessions, in the acquirement of professional knowledge.

SECTION IV.

Professional Examination.

This Examination is divided into two parts.

1. The First or Primary Examination, on Anatomy and Physiology, is partly written and partly demonstrative on the recently dissected Subject, and on prepared parts of the Human Body.
2. The Second or Pass Examination, on Surgical Anatomy and the Principles and Practice of Surgery and Medicine,* is partly written, partly oral, and partly on the practical use of Surgical Apparatus, and the Practical Examination of Patients.

* Candidates can claim exemption from examination in Medicine under the following conditions, viz. :—

- I. The production by the Candidate of a Degree, Diploma, or Licence in Medicine entitling him to register under the Medical Act of 1858, or a Degree, Diploma, or Licence in Medicine of a Colonial or Foreign University approved by the Council of the College.
- II. A declaration by the Candidate, prior to his admission to the Final Examination for Membership or Fellowship, that it is his intention to obtain either of the Medical Qualifications mentioned in the foregoing paragraph, in which case the Diploma of the College will not be issued to him until he shall produce either the said Medical Qualification or proof of having passed the several examinations entitling him to receive the same.
3. The Primary Examinations are held in the months of January, April, May, July, and November, and the Pass Examinations generally in the ensuing week respectively.
4. Candidates will not be admitted to the Primary Examination, until after the termination of the Second Winter Session of their attendance at a recognised School or Schools; nor to the Pass or Surgical Examination, until after the termination of the fourth year of their professional education.
5. The Fee of Five Guineas, paid prior to the Primary Examination, and allowed on the whole fee of Twenty-two Pounds* payable for the Diploma, is retained; and after any two consecutive failures at the Primary Examination, the Candidate is required to pay an *additional* fee of Five Guineas prior to being again admitted to that Examination, which *additional* fee is also retained.

* This sum of Twenty-two Pounds is exclusive of the Fee of Two Pounds paid for the Preliminary Examination.

6. Five Guineas, part of the sum of Sixteen Pounds Fifteen Shillings, the balance of the whole fee due for the Diploma and paid prior to the Pass Examination, is retained; and after any two consecutive failures at the Pass Examination, the Candidate is required to pay an *additional* fee of Five Guineas prior to being again admitted to the said Pass Examination, which *additional* fee is also retained.
7. A Candidate having entered his name for either the Primary or Pass Examination, who shall fail to attend the meeting of the Court for which he shall have received a card, will not be allowed to present himself for examination within the period of three months from the date at which he shall have so failed to attend.
8. A Candidate referred on the Primary Examination is required, prior to his admission to re-examination, to produce a Certificate of the performance of dissections during not less than three months, subsequently to the date of his reference.
9. A Candidate referred on the Pass Examination is required, prior to his admission to re-examination, to produce a Certificate of at least six months' further attendance on the Surgical Practice of a recognised Hospital, together with Lectures on Clinical Surgery, subsequently to the date of his reference.

The following are the Hospitals and Schools of Surgery and Medicine from which Certificates of the Professional Education of Candidates for the Fellowship and Membership will be received by this College, for the year commencing the 1st of August, 1874.

Hospitals in England.

LONDON. St. Bartholomew's.—St. Thomas's.—Westminster.—Guy's.—St. George's.—London.—Middlesex.—University College.—Charing Cross.—King's College.—St. Mary's.

PROVINCIAL. Bath United Hospital.—Bedford General Infirmary.—Berkshire Royal Hospital, Reading.—Birmingham: General Hospital; Queen's Hospital.—Bradford Infirmary.—Bristol: Infirmary; General Hospital.—Cambridge, Addenbrook's Hospital.—Derbyshire General Infirmary.—Devon and Exeter Hospital.—Gloucester General Infirmary.—Hants County Hospital.—Hull Infirmary.—Kent and Canterbury Hospital.—Leeds General Infirmary.—Leicester Infirmary.—Liverpool: Royal Infirmary; Northern Hospital; Royal Southern Hospital.—Manchester Royal Infirmary.—Newcastle-upon-Tyne Infirmary.—Norfolk and Norwich Hospital.—Northampton General Infirmary.—Nottingham General Hospital.—Oxford, Radcliffe Infirmary.—Salisbury General Infirmary.—Salop Infirmary.—Sheffield General Infirmary.—Staffordshire General Infirmary; North Staffordshire Infirmary.—Sussex County Hospital.—Wolverhampton and Staffordshire General Hospital.—Worcester Infirmary.

Hospitals in Ireland.

DUBLIN. Richmond.—Dr. Steeven's.—City of Dublin.—Mercer's.—Meath.—Jervis Street.—St. Vincent's.—Adelaide.—Mater Misericordiae

PROVINCIAL. Belfast General Hospital.—Cork South Infirmary and County Hospital; North Infirmary and City of Cork General Hospital.—Galway County Infirmary and Town Hospital.

Hospitals in Scotland.

EDINBURGH. Royal Infirmary.

PROVINCIAL. Glasgow Royal Infirmary.—Aberdeen Royal Infirmary.

Schools in England.

LONDON. St. Bartholomew's.—St. Thomas's.—Guy's.—St. George's.—London.—Middlesex.—University College.—King's College.—Westminster.—Charing Cross.—St. Mary's.

PROVINCIAL. Birmingham, Queen's College.—Bristol, Old Park Medical School.—Cambridge University School.—Leeds School of Medicine.—Liverpool Infirmary School of Medicine.—Owen's College (Manchester) Royal School of Medicine and Surgery.—Newcastle-upon-Tyne College of Medicine.—Sheffield Medical Institution.

Schools in Ireland.

DUBLIN. Royal College of Surgeons.—Trinity College.—Carmichael School of Medicine.—Peter Street Original School of Medicine.—Cecilia Street Medical School.—Dr. Steeven's Hospital.

PROVINCIAL. The Queen's Colleges of Belfast, Cork and Galway.

The several Schools recognised by the Royal College of Surgeons in Ireland.

Schools in Scotland.

EDINBURGH. University.

PROVINCIAL. Glasgow University.—Aberdeen: King's College, Marischal College and University.

The several Schools recognised by the Royal College of Surgeons of Edinburgh.

Schools and Hospitals in the British Dependencies and Colonies.

The Medical College of Bengal.—The Medical College of Madras.—The Grant Medical College at Bombay.—Canada: The University of Toronto; the University of Trinity College, Toronto; The University of Victoria College, Toronto; The University of McGill College, Montreal; Bishop's College, Montreal; The Royal College of Physicians and Surgeons, Kingston; The University of Laval, Quebec.—Dalhousie College and University, Halifax, Nova Scotia.—Australia: The University of Melbourne; The Melbourne Hospital; University of Sydney; The Sydney Infirmary; Adelaide Hospital.—Tasmania: The General Hospital, Hobart Town; The General Hospital, Launceston.

In Foreign Countries.

Paris.—Montpellier.—Strasburg.—Berlin.—Vienna.—Hiedelberg.—Bonn.—Göttingen.—Wurzburgh.—Leyden.—Liège.—Pavia.—Pisa.—Royal Caroline Institute, Stockholm.—Copenhagen.—New York.—Philadelphia.—Harvard University, Cambridge, Boston.

The following are the Universities and other Institutions whose

Certificates or Degrees will be recognised and received in lieu of the Certificates of having passed the Preliminary Examinations for the Fellowship and Membership respectively at this College, during the year commencing on the 1st of August, 1874, viz. :—

FELLOWSHIP.

1. A Certificate or Testamur of Graduation in Arts at one or other of the following Universities, viz. : Oxford ; Cambridge ; Dublin ; London ; Durham ; Queen's University in Ireland ; Edinburgh ; Glasgow ; Aberdeen ; St. Andrews ; Calcutta ; Madras ; Bombay ; McGill College, Montreal ; Queen's College, Kingston, Canada ; and a Foreign University on the special recommendation of the Court of Examiners approved by the Council.
2. A Certificate of having passed such Examinations in Arts as shall be required for Graduation in Medicine by the following Universities, viz. : Oxford ; Cambridge ; London (including Greek and French or German) ; and Durham.

MEMBERSHIP.

1. A Certificate or Testamur of Graduation in Arts at one or other of the following Universities, viz. : Oxford ; Cambridge ; Dublin ; London ; Durham ; Queen's University in Ireland ; Edinburgh ; Glasgow ; Aberdeen ; St. Andrew's ; Calcutta ; Madras ; Bombay ; McGill College, Montreal ; and Queen's College, Kingston, Canada.
2. A Certificate of having passed one or other of the following Examinations, viz. : Oxford.—Responsions or Moderations ; Middle-Class Examinations, Senior, the Certificates to include Latin. Cambridge.—Previous Examination ; Middle-Class Examinations, Senior, the Certificates to include Latin. Oxford and Cambridge "Schools Examination Board," the Certificates to include the several subjects required in the Preliminary Examination of the College. Dublin.—Entrance Examination. London.—Matriculation Examination. Durham.—Examination of Students in Arts in their second and first years ; Middle-Class Examinations, Senior, the Certificates to include Latin ; Registration Examination for Medical Students. Queen's University in Ireland.—Two Years' Arts Course for Diploma of Licentiate in Arts ; Preliminary Examinations at end of B.A. Course ; Middle-Class Examinations, the Certificates to include Latin ; Matriculation Examinations. Edinburgh ; Aberdeen ; Glasgow ; and St. Andrew's.—Preliminary or Extra Professional Examinations for Graduation in Medicine. Calcutta ; Madras ; and Bombay.—Matriculation Examinations. Bishop's College, Montreal ; McGill College, Montreal.—Matriculation Examination. Queen's College, Kingston, Canada.—Matriculation Examination ; Preliminary Examination of Students in Medicine. The University of Trinity College, University College, and Victoria College, Toronto.—Matriculation Examinations. University of Laval, Quebec.—Matriculation Examination, Nova Scotia ; King's College, Windsor.—Matriculation Examination, Responsions. Dalhousie College and University, Halifax.—Matriculation Examination. New Brunswick, Fredericton.—

Matriculation Examination. University of Melbourne.—Matriculation Examination, with a Certificate that the Student has passed an Examination in Latin. University of Sydney.—Matriculation Examination. New York, Bellevue Hospital Medical College.—Matriculation Examination. Preliminary Examination for the Fellowship of this College. Preliminary Examinations of the Royal Colleges of Surgeons in Ireland and of Edinburgh, and of the Faculty of Physicians and Surgeons of Glasgow. Examinations in Arts of the Society of Apothecaries of London, and of the Apothecaries' Hall of Ireland. First-Class Examination of the Royal College of Preceptors. Examination for Testamur of the Codrington College, Barbadoes. Examination for Degree of Associate of Arts, granted by the Tasmanian Council of Education, with a Certificate that the Student has been examined in Latin and Mathematics. Third-Class Certificate in Literature and Science, Cape of Good Hope.

N.B. *The Certificates of having passed on and after the 1st of January, 1870, the Middle-Class Examinations, Senior, must include Mathematics as well as Latin.*

EDWARD TRIMMER.,

Secretary.

THE DENTAL SURGEONS ATTACHED TO THE VARIOUS HOSPITALS OF LONDON ATTEND AS FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM AUGUST 1ST TO AUGUST 31st, 1876.

Extractions.	Children under 14	-	-	-	-	-	-	472
	Adults	-	-	-	-	-	-	581
Under Anæsthesia		-	-	-	-	-	-	193
Gold Stoppings		-	-	-	-	-	-	109
White Foil ditto		-	-	-	-	-	-	42
Plastic ditto		-	-	-	-	-	-	186
Irregularities of the Teeth treated surgically and mechanically		-	-	-	-	-	-	7
Miscellaneous Cases		-	-	-	-	-	-	168
Advice Cases		-	-	-	-	-	-	145
Total								1903

JAMES MERSON, *Dental House Surgeon.*

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

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THE
Monthly Review
 OF
 DENTAL SURGERY.

October
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THE MONTHLY REVIEW OF DENTAL SURGERY.

No. V.

OCTOBER, 1876.

VOL. V.

American Dental Legislation.

The American Academy of Dental Science, in view of the then approaching Centennial Exhibition at Philadelphia, resolved, by way of bringing forward the claims of Dental Science, to compile a history of American Dentistry; and the resultant volume was issued last July.

From the very nature of the undertaking, in which little mention occurs of the advances made in other countries, the greater part of the volume takes a national point of view, and will appeal to American readers far more than to any others; but there is a chapter which, at the present moment, when the matter of Dental reform is being so largely and so warmly discussed, affords very valuable information to English readers. From this chapter, entitled "Dental Legislation," in which the texts of various legislative enactments are given, we have collected the following particulars.

In six of the States, after more or less difficulty and opposition, the profession have succeeded in obtaining legislative enactments, which bear the following dates:—Alabama, 1841; New York, 1868 (amended 1869); Ohio,

1868 (amended 1873); Georgia, 1872; New Jersey, 1873; Pennsylvania, 1876.

The Act to regulate the practice of dentistry in the State of New York need not detain us, for there is no penalty attached to its infringement, and it is hard to see what practical benefit it can confer, save that by according an official recognition to the State Dental Society it may serve to pave the way to some more stringent enactment. The Acts which have been passed in the five other States have many points in common; penalties, varying from 50 to 300 dollars, are incurred by their infringement, and the laws are apparently so framed as to facilitate the prosecution and conviction of offenders.

In general terms they prohibit persons who do not hold recognised dental qualifications, or certificates granted by licensing bodies created by the several Acts, from practising Dentistry. But persons already in practice are wholly exempt from the operation of the Acts in Georgia and in New Jersey; while in Pennsylvania those who have been three, and in Ohio those who have been five, years in practice, are exempted.

Qualified medical practitioners are also not subject to any of the clauses of the Acts, except perhaps in Ohio, in which State the exemption in their favour reads as if only applying to the operation of extraction.

A noteworthy feature in these Acts is the creation in each State of a licensing or examining board, the members of which are selected from the lists of the State Dental Society: these boards have power to grant licences to practise without (at all events in some States) the applicant having passed through any defined curriculum, so that the requirements of the statutes are not very rigid.

Indeed, after several careful perusals of the different enactments, we have formed the impression that there would be very few persons indeed who could not either claim exemption or comply with the terms of the statutes; no data as to the number of successful or unsuccessful prosecutions under the Acts are given in the volume quoted, but if we may judge from the exceeding difficulty experienced in getting convictions under our own Medical Act, they would not be numerous.

However, even though the Acts be practically inoperative, the moral gain in having obtained any recognition at all from the legislature is immense, and our American *confrères* are to be congratulated on having taken this first and most difficult step; as experience finds out the weak places in their operation, the amending of these existing enactments will be a far easier task, and will call forth far less oppositions than the inauguration of legislation upon a subject which has hitherto not lain within the scope of the law of the country.

The interest attaching to this subject at the present time is sufficient explanation for publishing the above statement without comment. In our next issue we hope to give in full the text of the Acts referred to.

The Month.

NATIONAL DENTAL HOSPITAL.

At a General Quarterly Committee Meeting held at the National Dental Hospital, on Friday, October 6th, Mr. Arthur Canton, L.D.S., R.C.S. Eng., was appointed Dental Surgeon in the place of Mr. Perkins, lately deceased.

DUBLIN DENTAL HOSPITAL.

We are pleased to learn at the last moment that premises have been obtained for the Dublin Dental Hospital, which will be opened in a few days.

MR. H. D. JUSTI.

Mr. H. D. Justi, of Philadelphia, has obtained the highest award given by the judges of the Centennial Exhibition at Philadelphia, for superiority of his make of artificial teeth, this article being the special and only exhibit by this firm.

MR. JAMES MURPHY.

Mr. James Murphy, Surgeon-Dentist, of 42 Welbeck-street, Cavendish-square, is in Charing-Cross Hospital in a dying state. It appears that the unfortunate gentleman, in alighting from a carriage at the Charing-Cross Terminus, slipped and fell while the train was in motion. He was crushed between the train and the platform. His injuries were excessive.

AMONG the recent publications by Messrs. Churchill we notice the long-promised work by Mr. Charles S. Tomes, on 'Dental Anatomy'; also the second edition of 'Dental Mechanics,' by Mr. Oakley-Coles.

We have received from Messrs. Ash and Son samples of Circular Soft Gold Pellets. For a (typically) prepared cavity with rounded borders, the advantage of pellets in this form will be apparent, the absence of angles being a great advantage. We shall report further on their utility next month.

Just on going to press we have received from Messrs. Ash and Son a sample of Enamel Cutters, for Kirby's Automatic Foot Mallet, according to patterns by Mr. Oakley-Coles. In our next issue we shall report upon them.

Abstract of Lectures on some of the more prominent Anatomical and Physiological Features of a Tooth, certain Pathological Conditions, and the Treatment indicated.

DELIVERED AT THE NATIONAL DENTAL HOSPITAL, OCTOBER, 1876,

By THOMAS GADDES, L.D.S.,
Assistant Dental Surgeon to the Hospital.

LECTURE I.

A little while ago I spoke to you upon "The Premature Extraction of the Temporary Teeth,"* and pointed out which members of that series might be removed with impunity, and those whose extraction before a certain age or condition would favour irregularity of the permanent successors. I then placed before you such data, that I thought the conclusions arrived at were inevitable and just.

To-day I shall endeavour to describe to you some of the more prominent anatomical and physiological features of a tooth, and account for the presence or absence of certain pathological conditions, deducing therefrom reasons which justify particular surgical treatment.

The Structure of a Tooth.—A typical tooth consists of pulp, dentine, enamel, and a layer of cementum covering the whole organ. This arrangement is well seen in the molar teeth of herbivorous mammals, such as that of the elephant, wherein there are, transversely arranged at nearly right angles to the grinding surface, numerous plates of dentine, with a covering of enamel, and these united together by cementum, which substance forms a considerable portion of the bulk of the tooth mass. In the human subject the external covering of cementum presents its characteristic structure only upon the root of the tooth, the tissue being thickest at the apex, gradually becoming thinner towards the neck, where it overlaps the enamel, and is represented on the crown by the so-called "Nasmyth's membrane," which is worn away shortly after the tooth appears through the gum.

The structure forming the character of human cementum is a hard, almost structureless, but laminated basis-tissue, containing lacunæ irregularly scattered, and numerous canaliculi running mainly in the direction from without inwards. The lacunæ are parallel to the long axis of the tooth.

* Vide Vol. IV., No. 7.

Towards the neck of a tooth these characters are less apparent, and the tissue becomes so thin that they are wanting.

In passing I must allude to the second chief theory regarding the development of this "cuticula dentis," which may be said to be that of Waldeyer, who considers the external epithelium of the enamel organ to be the source of Nasmyth's membrane; but the former theory, that Nasmyth's membrane is rudimentary cementum, is more generally accepted.

Cementum, then, being the most external hard tooth tissue, is frequently to be found in the natural pits or depressions between the cusps of bicuspid and molar teeth, giving an opaque appearance, which is liable to be mistaken for caries. That such a condition is the result of faulty development of the enamel and likely to be the seat of caries, you should not lose sight of in examining teeth: when in such cases you ought to ascertain whether decay be present or not, and if not, whether from the nature of the case you would be justified in preparing and filling the cavity. The question has its *pro* and *con*. Many of our American brethren file divisions between all teeth in anticipation of interstitial caries, and I have seen mouths wherein all the natural (yet abnormal) pits in the teeth were filled, not with rudimentary cementum, but with gold, probably for the same reason as the operation I have just mentioned. When patients are wisely under periodic supervision, I think such a procedure is uncalled for, and only justifiable when a patient is going out of the way of dental aid for some years.

Absorption, *Exostosis*, and *Necrosis* are different diseased conditions of the cementum, the result of certain histological phenomena which I shall attempt to briefly explain.

Absorption is the appropriation of existing material by an elementary cell or "bioplast," and that material may be both the contents of a contiguous bioplast and the calcified formed material of the cementum.

Exostosis is the complete development of a specialised bioplast with partial conversion of its contents into calcified formed material, producing a tissue abnormal in amount and form.

Necrosis is the death of the bioplasts or contents of the lacunæ contained in bone or cementum, caused by their nutrition being cut off; and this may result from occlusion of

some of the small vessels, brought about by the formation of a clot, or by an effusion into the surrounding tissues; and also from the action of poison, particularly phosphorus. The amount of tissue so affected cannot again live, but is removed—sequestered. My remarks upon this form of necrosis do not apply to that form of tooth disease spoken of as death of the pulp. It is objectionable to have the term necrosis applying to disease of two distinct tissues of a tooth, which diseases have widely different symptoms.

Absorption is notably seen in the wasting of the roots of the temporary teeth; it is also occasionally met with in the roots of otherwise sound permanent teeth. Absorption is frequently found to have alternated with exostosis; indeed it is intimately associated with development, new tissue is deposited by one bioplast and removed by another. So, according to the balance of development and absorption, are tissues built up on one hand, modelled and removed on the other. The bioplasts or cells which are immediately concerned in the process of absorption of the teeth or bone are termed "osteoclasts," a collection of these cells forming the absorbent papilla. A surface that has been the seat of absorption presents a characteristic festooned outline—the lacunæ of Howship. These consist of segments of circles which, when absorption is going on, correspond with contiguous osteoclasts.

Those cells which effect the formation of bone-tissue have received the name of osteoblasts. The manner in which these specialised bioplasts become ossified is by the deposition within the cell of calcareous granules; these become larger by deposit upon their surfaces, and ultimately coalesce. This deposition of granular matter does not take place equally through the cell, but commences at certain localities towards the circumference, assuming a globular form, and gradually encroaching upon the nucleus or remnant of the original cell, which, from this manner of formation, remains as a soft mass with processes, occupying a lacuna and its canaliculi. Such is the end of the formative process of an osteoblast. The canaliculi communicate with those from adjacent lacunæ, and they convey nutritive material which permeates every part of the hard tissue. Dr. Beale estimates that the canaliculi "are usually not separated from one another by a distance greater than the five-thousandth of an inch."

You will now more readily understand how the causes of necrosis bring about that result, seeing that the sustenance of the bone is dependent upon these fine canaliculi conveying nutrient fluid.

A part of a bone or the cementum of a tooth, having become necrosed, may be partially or wholly removed by absorption.

Thus, then, there may be absorption of a tissue that is the seat of exostosis or of necrosis.

From the very nature of these three diseases, which is that of cell-life and cell-death, affecting the cementum in the first two entirely, and in the last mainly, through the periosteum, little can be done by way of treatment beyond the removal of the tooth. Our curative treatment must be applied directly or indirectly to this ultimate cell-vitality. Anything short of this cannot be rational; and I am not aware of any reliable means of successfully controlling these diseases other than the radical cure—extraction.

LECTURE II.

ENAMEL.—In comparative anatomy enamel is the least constant of the dental tissues. It is entirely wanting in the teeth of certain fishes, in the order ophidia among reptiles, in the edentata (sloth and armadilla), in some cetacea (sperm whale, tusk of narwhal, and also in tusk of elephant) among mammals. When present it is superficial to the dentine, and may or may not be covered with cementum in the functional tooth.

The enamel as we find it in the human teeth is a dense, fibrous tissue, containing only from one to three per cent. of organic matter.

The fibres are hexagonal, striated, pursue a waved course, and are placed at right angles to the surface of the dentine. There is no intervening substance between the prisms. Each prism or fibre that abuts and occupies a little pit upon the surface of the dentine, appears generally to have its other, slightly larger, extremity free upon the surface of the tooth. There are other short fibres which run from the external surface and become lost in the substance of the enamel, not traversing its entire thickness. Thus is accomplished the completeness of the greater outer area of the enamel compared with the inner.

So soon as the development of the enamel is com-

pleted, it is not susceptible to those changes characterised by nutrition; indeed, there does not exist the means by which such process can be carried on, consequently, when it is affected with disease, that condition cannot be the result of any inherent so-called "vital action."

In absorption of the enamel, as we sometimes find it in the temporary teeth, the tissue is removed by the cells or osteoclasts of the absorbent papilla. These cells do not derive their vitality from, nor, beyond the appropriation of the tissue, does that vitality depend upon any life element of, the enamel. It is a tissue essentially dead.

The enamel of human teeth is frequently met with in an abnormal and diseased condition—abnormal in quantity and quality, diseased as the result of external agencies. The most common disease, as you know, is caries—a chemical disintegration of the earthy constituents.

From the foregoing considerations you will apprehend the terms exciting and predisposing causes of caries.

Having pointed out this structure of the enamel and the arrangement of the prisms, I shall direct your attention to one physical fact. When it is desired to remove any portion of the enamel, this will be most readily accomplished by directing the force through your instrument in a line parallel with the fibres of the part—the line of cleavage. To remove the enamel in any other than this direction requires more force; your object is less readily effected, and the operation is rendered more disagreeable to your patient. Of course these remarks are not intended to apply to simple trimming-up of the edges of a cavity.

DENTINE.—Dentine forms the great bulk of all teeth. The teeth of some animals are made up entirely of dentine, cementum and enamel not entering into any part of their composition.

Dentine consists of an apparently homogeneous matrix, and canals or tubes with their contents. The manner of arrangement, and the nature of these constituents, together with the microscopic appearance of the tissue, have given rise to the adoption of terms indicative of the various modifications of dentine, such as hard or true dentine, vaso-dentine, osteo-dentine, vitro-dentine, areolar dentine, globular dentine, plici-dentine, dendro-dentine, &c.; and all these modifications of dentine are found in the class *Piscis*.

In *True dentine* the tubes pursue a parallel wavy course at about right angles to the external surface of the tooth, describing from two to three bold primary, and numerous secondary curves. In some instances two hundred of these latter curves have been estimated in 1-10th of an inch.

The diameter of the dentinal tubes varies in the teeth of different animals, the average diameter being about 1-12,000th of an inch. In man their diameter ranges from 1-4,500th to 1-10,000th of an inch.

Remembering the size of the corpuscles of the blood of man—red 1-3,200th, white 1-2,500th of an inch in diameter, those of some mammals being a little smaller and of fishes larger—it will at once be obvious that true dentine must be unvascular.

In *Vaso-dentine* the tooth is traversed by a number of equi-distant vascular canals, which are more or less parallel to each other and to the axis of the tooth. From these canals numerous tubes radiate and give off branches which freely anastomose with the branches of the tubes of the same system. Each medullary canal, with its series of tubes, is surrounded by an external thin coat of cementum. This arrangement, when seen in transverse section under the microscope, has the appearance of a number of toothlets, the pulp of each represented by a vascular or medullary canal—a capillary tract of primitive vascular pulp which remains uncalcified.

That modification of tooth-tissue, which is designated as *Osteo-dentine*, is characterised by a network of vascular canals surrounded by a laminated matrix, and the interspaces throughout the substance of the tooth are traversed by fine tubes, which proceed from these canals, pursue a wavy course, branch and freely anastomose. The finer branches communicate with small spaces, which thus give the appearance of lacunæ and canaliculi. By means of these lacunæ, and by direct anastomoses, do the different systems communicate, consequently each apparent denticle, as seen in transverse section, is less distinct than in vaso-dentine; while in a longitudinal section no distinct appearance of toothlets is presented.

Vitro-dentine is a slight structural modification of true dentine. The tubes run out from a form of dentine of which the whole or part of the tooth is made up, their direction being at about right angles to the external surface.

The tubes may be parallel to each other, not branched nor communicative, or they may freely ramify and interlace together. Their diameter is from 1-13,000th to 1-23,000th of an inch. Owing to the predominance of the earthy constituents the tissue takes a high polish. It is found in the teeth of many fishes taking the place of true enamel, which tissue is not found in that class of vertebrata.

Areolar and Globular Dentine. In the true dentine of human teeth are frequently to be seen tracts of uncalcified matrix, which have received the name of inter-globular spaces. The outline of these "spaces" is irregular, mainly describing segments of circles. This form is due to the deposition of calcareous matter in spheroidal or globular masses, these masses constituting the walls of the so-called spaces. These loculi are formed by the coalescence of several of the globules enclosing a portion of the yet uncalcified matrix, and thus occluding the general deposition of calcareous matter into the formed material so pent up. Eventually this enclosed formed material undergoes calcification, the deposition of earthy matter probably being chemical rather than physiological; yet the irregular outline of the "space" remains, and presents the appearance of connective or areolar tissue fibres, thus giving rise to the term *Areolar-dentine*.

Very minute interglobular spaces are seen in great numbers intervening between the dentine and cementum of the root of a tooth, and associated with these is generally found a minutely granular or globular condition of dentine. This is called *Globular dentine*. In this situation, and so constituted, is the "granular layer," which cannot be considered as other than an imperfectly-developed tissue. It is very rapidly acted upon by caries. Globular masses of dentine are also occasionally found in the pulp; in this situation they may be analogous to laminated matrix, or have some resemblance to osteo-dentine (osteo-dentinal bodies).

I have given you typical illustrations of the principal modifications of dentine, but the gradations from dentine to vaso-dentine, and this to osteo-dentine, and this to bone, are so indefinite that in many teeth it is difficult to define the boundaries of the various modifications when present in the same tooth; nor does the same modified structure prevail in all the teeth of one fish.

True dentine is found in most reptiles and mammals, and

in some fishes; vaso-dentine in the saw-fish, mylobates, chimera, &c.; osteo-dentine forms the great bulk of the teeth of most fishes; it is also found in the central part of the tusks of the elephant; and it is the usual form of tissue found in calcification of the pulp of human teeth.

(To be concluded.)

Introductory Lecture to the First Course of Lectures on Dental Anatomy and Physiology, Human and Comparative.

GIVEN IN CONNECTION WITH THE PLYMOUTH DENTAL DISPENSARY,

By F. H. BALKWILL.

GENTLEMEN,—We are commencing a Course of Lectures on Dental Anatomy and Physiology, Human and Comparative, and I think it will be best to set out by trying to get some distinct ideas of what our subject embraces, so as to know what to include in our studies and what to exclude from them.

It is the fashion to avoid defining, the reason generally given being that there are, on the one hand, so many definitions to choose from that it is difficult to elect one; on the other, that there are many things belonging to a subject which it is impossible to bring within the grasp of a reasonable definition. But I think the real reason is that words of general signification are used differently by different people, each being conscious that his idea is not exactly the same as that of others, and cannot therefore be framed by the same definition; still, I think this tendency to shirk definition is unwise. Every one, when using significant words concerning subjects on which he has thought, and about which he is supposed to know something, ought, at any rate, to be able to give the meaning which he attaches to these words, although he may not be able to include in that definition all that every other person means by the same words.

We will begin by considering the word Physiology. This has been defined as the Science of Life, a definition which I do not think will suit us, as it is a conclusion rather than an explanation. It means that life is the result of certain physical arrangements through mechanical and chemical

laws. Theology or Metaphysics might each of them be equally well defined as the Science of Life, according to the point of view which the propounder might take of the nature of that mysterious principle, or substance, Life. With spiritual or intellectual life, Physiology is not directly concerned, although, of course, in a wider and deeper sense, all the sciences are connected, and grow into or out of each other.

Physiology is a material science, but it is intimately connected with Life.

In the material world we find three great divisions, the Animal, Vegetable, and Mineral Kingdoms. Now the word is never used in connection with the mineral world, except as this is made use of as food by the other two, or in a metaphorical sense; therefore we must try to find out exactly how it applies in them. These kingdoms are composed entirely of live or dead animals or plants, products of these, or parts of them. Now, it is not the knowledge of these animals or plants in their similarities or differences as individuals which constitutes Physiology—this is Biology; the knowledge of animals being called Zoology, that of vegetables Botany.

Neither is it the knowledge of the parts or products of animals or plants, separately from their relation to, or action in, the living being. We shall not be studying ivory physiologically if we note the shape, size, and hardness of the handle of a dinner-knife, or examine its component proximate compounds, as gelatine and calcareous salts, or view its microscopical structure; unless we examine these qualities in reference to their use to the life of the elephant, as in their giving strength and consistence to the tusk, which was in consequence able to perform such or such duties in the life and general habits of the animal. It is not only the parts of animals or plants which can be studied physiologically; we may take milk, or tears, or gum, and if we consider them where they are produced and their relation to the life of their producer, they come rightly within our study. And lastly, we may have to consider the foods which nourish these animals or plants.

On summing up we find that Physiology deals with what goes into living things, the different physical parts of them, and whatever leaves them, in so far as these substances, parts, or products have reference to their life. We will

therefore define Physiology as the *Science of the Physical Machinery of Life: or the Science of the functions of the Physical Organs of Life.*

The first definition is all, perhaps, that we have legitimately arrived at; the second may be more distinctly and easily recognisable, but it will be necessary to say a few words first of the two words, functions and organs. Life operates and is manifested only through bodies. These bodies are built up into their respective forms, either directly from the mineral kingdom or from the dead bodies of other animals or plants, and one of the principal distinctions between them and mineral substances is that they pass through determinate periods of existence, that is, commencement, life, and death. According to Huxley there is a uniform physical basis of life, to which he has applied the name of "Protoplasm." Without such a material substratum or medium through which to work, no one vital phenomenon can be exhibited. This protoplasm can only be chemically described. It consists of the four elements—carbon, hydrogen, nitrogen, and oxygen—united into an approximate compound called protein, which is nearly identical with white of egg. These bodies are not made all at once, but increase gradually or grow; it is therefore evident that a certain *action* must be at work appropriating materials with which to build them up.

The appropriation of food, then, is one of the first *actions* necessary to the existence of life.

Teeth are only found amongst animals, and as, therefore, it will only be with animal physiology that we shall have to do, before going any further it may be as well to get rid of plants from our consideration.

To say why this is animal or this vegetable among their lower forms is often very difficult, although there is not now much dispute as to what are animals and what plants; but amongst the higher forms of life, one plain and easily recognisable distinction is that animals possess powers of voluntary locomotion which plants do not, and as there is a traceable connection, link by link, between the highest and lowest animals and between the highest and lowest plants, but no relationship or the slightest danger of confusing animals with plants except in their lowest forms, it will be sufficiently distinct for our purpose to call animals *all those living beings which are possessed of the power of voluntary*

locomotion, together with those which can be evidently classed with them by their affinities.

As before said, the first function of animal life is to appropriate food in order to grow. In performing the actions necessary to this end, some physical force is expended, and as this is obtained by the decomposition of part of the body which is then no longer of the same use that it was before and has to be got rid of, this waste must be made up. The animal has not only to eat to grow but to eat to live, or it would soon waste away to nothing. Thus there is always waste and repair going on, and it is only when the in-comings exceed the out-goings that the animal increases in bulk.

At the commencement of life there is rapid growth, though subject to enormous fluctuations and variations known as metamorphoses: as among insects, where the egg develops into the caterpillar which grows much in size and changes to a chrysalis, with perhaps loss of substance—this is gradually metamorphosed into a moth or butterfly, which grows but little.

Generally during or up to middle life the increase is slight, after which there is a gradual decrease until death. There is scarcely any standing still but constant slight fluctuation, with a general tendency to increase or decrease.

The continuance of animal life is provided for by the continual reproduction of young. Certain processes, into which we need not enter, take place, which result in a portion of the animal separating from it, which portion eventually develops into an independent animal. This is generally similar to its parent but not always so, as in some of the lower forms of life it is only the grandchild or great-grandchild which reassumes the original form.

Not only are all *individual* animals descended from previous similar parents, but the different kinds or species can be so arranged, according to their structures and most essential characters as to form a sort of genealogical tree, suggesting irresistibly the conclusion that they either represent the successive steps of development of idea or invention from one source on which plan they were created, or that the different species have in reality developed one from another. That thus a correct classification really expresses hereditary relationship or consanguinity. The first of these ideas has held sway the longest amongst

scientific men, the second is beginning to be fashionable ; whether it will be able to maintain its ground seems doubtful, but in the meantime we may bear in mind that, in idea or in fact, not only is there the gradual development of one animal from another, but also the gradual development of one species from another.

The simplest form of animal life, perhaps, presents itself in the form of a little jelly-like mass composed of the protoplasm of which we have previously spoken. Nevertheless, to quote from Professor Huxley, "it possesses all the essential properties and characters of vitality ; it is produced from a body like itself ; it is capable of assimilating nourishment, and exerting movements." It has no definite organs or parts ; when it moves it pushes out any part of the body which is convenient ; when it wishes to assimilate food, it can hardly be said to eat, it places itself over or against the food, which then passes directly into it through any part.

For such animals to be able to maintain their existence the surrounding conditions of life—that is a supply of food and the absence of a liability to chemical or mechanical injury—must be of the most favourable kind. Consequently we find one of the first things done by animals of this type is to cover their delicate bodies with a tiny calcareous shell. These animals, foraminifera, leave holes through their shells in order to protrude their bodies in search of food.

Another very simple form of the same sub-kingdom—that of the Protozoa—presents itself in the gregarinida, animalculæ, commonly found as a parasite in cockroaches ; to quote from Huxley, "in the form of a sac, composed of a more or less structureless, but not very well defined membrane, containing a soft semi-fluid substance, in the midst, or at one end, of which lies a delicate vesicle ; in the centre of the latter a more solid particle. The inclosed vesicle is probably specially adapted to take part in the process of reproduction, and if so, will at once give us an example of an *organ* ; *it is a part of the body specially prepared to do part and not all of the actions or functions included in the life of the animal.*

An animal is classed higher or lower in the scale of life according to the number and difficulty of the actions which its organs enable it to perform. The animal described is worth remembering, as it forms the model of the ultimate parts by which all the tissues of all animals are deve-

loped; suggesting to us an idea as if all the different tissues of the organs of our bodies were built up from the same food by innumerable little gregarinidæ, each doing what it has been in the habit of doing, selecting the required elements out of the food brought to it, and developing therewith the same tissues it has done before, or fresh (gregarinida) cells to take its own place; and each that sort of arrangement of tissue suitable to the organ in which it is situated. So that physiological laws, instead of being capable of being analysed into chemical and mechanical principles, as was at one time suspected, can be best expressed as *habits of action*, to which chemical and mechanical laws are importantly subservient.

On the supposition that all complex animals have in reality been evolved from the simpler forms, the suggestion is that each essentially active cell element in their tissues is the hereditary descendant of one of these simple animals, and therefore every organ expresses *past habit of action* as well as facilitates present habit of action.

On the theory of ideal development this would suppose that each of the elementary cells of the body was gifted with a sort of instinct prompting it always to develop in a certain manner; in fact, do that office and no other, which each tissue does.

The real gregarinidæ absorb all their food through the sac-like envelope before described; but in the next sub-kingdom we find that definite organs for the reception of food begin to show themselves. The outside envelope, becoming thicker and stronger, is no longer capable of absorbing all the required food, and a funnel-shaped opening admits it into the interior of the body. This advance in organisation enables the *infusoria* to live where the surface of their bodies is not always bathed in food as is the case with gregarinida, but then they must search for it, to meet which requirement they are furnished with little vibratile hair-like processes called cilia, by means of which they can swim about. This rise in organisation, you may notice, involves greater difficulty in fulfilling the conditions of existence with a co-ordination of different organs, enabling the animal to fulfil those conditions, a law of general application in the scale of organised beings.

In infusoria we have the simplest form of mouth; an

opening to admit food into a part of the body where it will be assimilated.

A little higher in the scale and we meet with animals, freshwater polyps and sea anemones, having tentacles arranged around the sides of the mouth, the better to convey food into it, and having their insides hollowed into a distinct cavity for its reception.

As a further step, the cavity has another orifice added to it for the escape of such particles as are wanted to be got rid of, an anus; then it is lengthened out and becomes an alimentary canal, part of which becomes enlarged to hold the food when first received, and we have a stomach; an organ is developed for sending or receiving quick messages from distant parts of the body, so as to centralise or more definitely regulate and co-ordinate the actions of all the parts: this is the commencement of the nervous system. The fluid which has been absorbed through the walls of the stomach requires to be distributed to all the organs for their support, and a heart is developed; this is the commencement of the vascular system. This fluid food requires to be yet further decomposed, so that the various parts may choose what they want of it. To do this it is exposed to the action of air in water, by being made to pass through thin tissue, so arranged as to expose a large surface at a time to the influence of these fluids; and we have the earliest form of gills. Soon an organ is added for collecting and expelling effete fluids, the commencement of the urinary organs. Instead of any part of the animal moving when it wants, definite parts called muscles are now specially formed, which only contract when they receive messages to do so sent through the nervous system.

Thus it goes on, organ is added to organ, each enabling the possessor to do something, and thus live in some manner different to any other species, until we arrive at man, whose intelligence is sufficient to allow him to vary his actions and powers by the aid of implements, so that his further development does not seem to proceed so much from the addition to, or alteration of, his bodily organs as from the improvement of his mind and the invention or perfecting of his implements; in both of which respects there is wide scope for dentists.

Anatomy is the description of the various organs or parts of the body, their forms and relations to other parts.

Comparative anatomy, the comparing these parts with those of other animals; it deals, perhaps, more with the difference of similar organs in different species than with their likenesses.

Comparative physiology, on the other hand, compares the organs in different species in relation to their functions, and deals rather more with their similarities than with their differences.

I hope we have now got a pretty clear idea of the scope of comparative anatomy and physiology; it only remains to know what is included in the word *tooth*. In trying to define this word it may be best to begin where there is no doubt that most of our knowledge commences, at the last chapter.

As I have previously remarked, the species of animal can be classified by gradual steps of developement and general affinities into a kind of genealogical tree; whether this is by actual hereditary descent, or the process of ideal invention and creation, it follows that organs in their change from one species to another do not suddenly disappear or greatly alter their relative positions; thus, by intervening links, we can often trace this sort of genealogical relationship between organs in widely separated species after they have quite lost the same functions. We might easily recognise this relationship in the hind hand of a monkey to the human foot, but we should not so easily see it, perhaps, in the hoof of the forefoot of a horse and our own forefinger.

This is quite a different classification to that of function, and although the general rule is for them to coincide, the exceptions are sufficiently numerous greatly to embarrass definition. As whilst the meaning of words in general language is usually based upon their function or purpose, community of origin has an almost equal hold on our belief as to the kinship of things.

The membrane of a bat's wing has the same function as the feathers of the wing of a bird. The trunk of an elephant may have to some extent the same functions as the human hand, but they are not nearly related genealogically.

The genealogical relations of an organ are called its *homologies*, to distinguish them from its functional relationships which are called analogies. It is the difference of ranking a man according to his family, or his profession.

In defining a tooth we have to include such organs as

the teeth in the Echinus, which are hardened by salts of lime; and those of the leech, or on the odontophore of molluscs which are hardened by silica; these are too intimately related analogically to our own teeth to be omitted from the definition, though I doubt if any homological connection can be traced between them; we have to exclude from our definition the beaks of birds, tortoises and cuttlefish, the nipping jaws of insects, crustacea, centipedes and spiders, and the whalebone of the Right whales.

Teeth were, no doubt, first named from human teeth, and we find their general characteristics to be that they are hard substances of different forms placed just within the mouth, their office being to comminute food before it is swallowed, having no separate motion of their own, but being implanted in a framework by the movement of which they act, and suited by their forms and excessive hardness, to bite, break up, and masticate food, which would be too hard for the tissues that carry them.

Such being their general functions, we will define them as exposed hard bodies placed in the mouth for the purposes of obtaining or preparing food which, without the aid of their hardness, would be unavailable, carried by or implanted in some other softer organ by which they are moved; and also *all such other organs as can be best homologically classed with these.*

Transplanting Teeth.

DRAWING TEETH, CLEANING AND REPLACING THEM.

Some Curious Facts in the History of Dentistry—Old-Time Writers on Transplanting and Doctoring Teeth.

The aphorism that there is nothing new under the sun finds no stronger proof than in dentistry, notwithstanding all the discoveries and improvements in the operative branch of the profession. When the importance of the teeth, both as regards the prime object of mastication and the beauty of the face, is considered, it is really no wonder that for hundreds of years past the best scientific ability has been devoted to their preservation and replacement in case of loss,

and that it is the highest aim of the profession to-day to preserve them under all circumstances.

The popular notion is that when a tooth aches, the best, if not the only thing to do, is to have it extracted; and there are plenty of cheap shambles where this sort of irreparable defacement is done under the most soothing circumstances, so that one may, as it were, laugh while a bone is being wrenched from its socket and thrown away. We do not propose an essay on practical dentistry, however, but rather, by presenting some curious facts in the history of the profession, to show, first, that a practice in vogue nearly three hundred years ago is revived, and, lastly, that the preservation of the natural teeth is the best object to be attained for the patient. The practice alluded to was to remove the decayed tooth, repair and replace it in the socket again, and cases are reported where this was done, and in which the decayed tooth was thrown away and replaced by the sound tooth of another person; success attended both operations. There exists, however, some doubt as to the permanency of the benefit thus derived; but instances are not wanting, in modern practice, where operator and patient agree to give both methods, namely, the extraction, repair and replacement of diseased teeth, and the transplanting of sound, living teeth from one person's jaw to another—a thorough practical test.

There can be no doubt that the removal of the natural teeth inflicts irreparable injury to the natural beauty of the face, first, by destroying its expression and causing a collapse of the features; and lastly, by destroying the natural powers of mastication, and subjecting the patient to the perpetual annoyance of artificial dentures. Of course there are cases where the latter are an inevitable necessity, but they never can wholly take the place of those useful ornaments set in the gate of life by the all-creating hand of nature. They bear the same relation practically and aesthetically to the human face that an artificial hand or limb does to the human form.

The celebrated Ambrose Pare seems to be the earliest writer who alludes to the practice of inserting the natural teeth of one individual in the jaws of another. In a work written by this author about the close of the sixteenth century he says: "I have heard it reported by a credible person that he saw a lady of the prime nobility, who, instead of a

rotten tooth she drew, made a sound tooth, drawn from one of her waiting maids at the same time, to be substituted and inserted, which tooth, in process of time, as it were taking root, grew so firm that she could chew upon it as well as upon any of the rest. I have this but by hearsay." It is probable that Pare himself was somewhat sceptical in regard to the matter, as he is particular to tell his readers that his evidence was only "hearsay." Upon the subject of replanting the teeth he gives his own experience, which furnishes us with the first authentic record of the operation. After referring to the diseases of the teeth, their treatment and cure, the writer adds that "if the teeth become loose by a fall or a blow, they must not be taken forth, but restored and fastened to the next that remain firm, but in time they will be confined in their sockets, as I tried in Anthony de la Rue, who had his jaw broken with the pommel of a dagger, and three of his teeth were loosened and almost shaken out of their sockets; the jaw being restored, they were also put in their places and bound to the rest with a double waxed thread; for the rest, I fed the patient with broth, jellies, and the like, and made astringent gargarisms of cypress nuts, myrtle berries and a little alum boiled in oxycrate, and I wished him to hold it a good while in his mouth. By these means I brought it to pass that he within a while after could chew as easily on these teeth as upon the other."

The edition from which these extracts were taken was translated from the Latin, and compared with the French, by Thomas Johnson, in 1617. Pare, let it be observed, died in 1590; he was born 1509, so that his book was written and published some time between those years.

In the eighteenth century, when all kinds of knowledge were much advanced, and the merits of different systems were fairly tested, the transplantation of teeth met with much disfavour from the most eminent representatives of the dental profession. This may be inferred from the following transcript from the work of Thomas Berdmore, surgeon-dentist to George III., King of England, who says:—

"The surgeon's art has taught that a tooth that has been partially or totally forced out of its socket may be restored again to its former situation and firmness, and may serve for use and ornament to the latest period of life."

It further appears that his faith in replantation is not excessive; moreover, that empiricism was abroad then as now. He says:—"But after all that has been said, I think it necessary to add, for the sake of undissembled truth, and to prevent the imputation of countenancing the impositions that occur every day, that the success on all these occasions, however sufficient to justify the future trials and practice of honest and judicious people, is by no means equal to the extravagant assertions and promises of certain advertising impostors. In the most favourable circumstances it is more than an equal chance that a tooth once extracted or beat out will fasten again."

In a work published in 1774 by M. Patencee, a dentist residing in London, we find the following:—"I shall next consider transplanting the teeth, which of late years has been practised by several persons, and is no other than extracting the tooth of one person and replacing it in the socket of another person. It is generally taken from some poor, indigent person, who, not knowing the consequence that attend such loss, consents to part with so useful an ornament, which can never be regained, for the sake of a few shillings, and it must certainly be highly offensive to the Almighty, for he never gave them for that purpose, neither are they their own to dispose of."

It has of late been asserted by a dentist that by means of a process known only to himself he could transplant teeth that had been extracted from the mouth any length of time, even after having carried them in his pockets till the roots were worn to a polish. His statement aroused the incredulity of almost every one; but M. Patencee observes that "transplantation may likewise be performed in another manner:—Take a tooth from a skull, or one that has been drawn for some time, lay it in water for three months to soak that it may open the pores; then take it out and put it in hot water for three hours, and when you extract the tooth from the person, this being fitted to the place, bind it fast with silk or weed to the other teeth."

In a work published in London, in 1778, by R. Wooffendale, a practical dentist, there is a more circumstantial detail of the mode in which teeth are to be transplanted, and of the uncertainties attending the undertaking:—"The transplantation of teeth," says he, "is a very desirable operation when it succeeds, but it may not be improper to

observe that the success in a great measure depends upon chance. A dentist may know which tooth is proper for the purpose of being transplanted, as, whether it is a perfect one, whether the enamelled part is of the proper size with respect to length, breadth, thickness, &c., but he cannot know whether its root will correspond in shape and proportion with that of the one whose place it is to supply till both are drawn, as it is well known the roots of teeth vary in these circumstances, notwithstanding the external and enamelled parts perfectly accord."

The person with whom the transplantation of teeth found most favour was John Hunter. This celebrated surgeon, whose writings on the teeth appeared at a somewhat later period than the author's from whom I have just quoted, was so warm an advocate of dental transplantation that he has been sometimes regarded as the author of the system. He endeavours to meet the difficulty of putting transplanted teeth into new sockets in consequence of the deviation of these organs from a common type and size. "Considering," says he, "the almost constant variety of the size and shape of the same class of teeth in different people, it would appear almost impossible to find the tooth of one person that should fit with any degree of exactness the socket of another; and this observation is supported, and, indeed, would seem to be proved, by observing the teeth in elephants. Yet we can actually transplant a tooth from one person to another, nature assisting the operation, if it is done in such a way that she can assist. And the only way in which nature can assist, with respect to size or shape, is by having the fang of the tooth rather smaller than the socket. The socket in this case grows to the tooth. If the fang is too large it is impossible, indeed, to insert it at all in that shape; however, if the fang should be originally too large, it may be made less, and this seems to answer the purpose as well."

Hunter concludes his consideration of the subject of transplantation by giving a curious experiment, in which he designs to show "that a living tooth, when transplanted into some living part of an animal, will retain its life, and the vessels of the animal shall communicate with the teeth." "I took," he said, "a sound tooth from a person's head, then made a pretty deep wound with a lancet into the thick part of a cock's comb, and pressed the fangs of the tooth into this wound and fastened it with threads passed through

other parts of the comb. The cock was killed some months after, and I injected the head with a very minute injection; the comb was taken off and put into a weak acid, and the tooth being softened by this means, I slit the comb and tooth into two halves in the long direction of the tooth. I found the vessels of the tooth well injected, and also observed that the external surface of the tooth adhered everywhere to the comb by vessels similar to the union of a tooth with the gum and sockets." The circumstances which led to the abandonment of the system of transplantation, after a fair trial by Hunter and many other able practitioners, are clearly stated by Dr. Joseph Cox, an eminent surgeon-dentist, in a work published in 1814, on the natural history of the teeth. In his words, "The ill-success and unfortunate consequences that have sometimes occurred have caused the practice to be abandoned for many years past. The other methods of supplying the loss of teeth are so unexceptionable and invariably successful, that we have no reason to regret the failure of the method of transplanting. I might, indeed, have observed that this operation involved in it a defect of moral principle, as one person is injured and disfigured in order to contribute to the luxury or convenience of another."

In a more recent work J. Lefoule, a distinguished dentist of Paris, denounces transplantation in the following terms:

"We consider it a sacred obligation to unite our voice to that of all the French dentists who have written upon this matter in a unanimous cry of reprobation against men who do not blush to lend themselves to the selfishness of the rich, which would avail itself of the misery of the poor to extort a tooth to replace one which, perhaps, was lost by intemperance or debauchery.

"We repeat it, that this traffic is almost banished from France, and that there is not a single dentist here who would lend his aid to it. We regret that England and Germany do not yet follow so praiseworthy an example."

From all scientific records it appears that the practice of transplanting teeth was fairly tested in the past age and rejected, both on account of the pernicious consequences with which it was attended, and the introduction of other means for effecting the same ends. The attempts to revive the exploded system at the present day are more unjustifiable, as great advancement has been made in the profession

within the past fifty years, and greater resources have been brought within reach by the rapid progress in other arts and sciences. It would seem unnecessary to enter into further discussion respecting the inhumanity or impropriety of inflicting pain and injury on one individual in order to give another the chance of a very uncertain advantage. Nor is the evil confined to a mere failure of the operation or the troubles in the organs for which the remedies are designed. The danger of inoculation in the process of transplanting becomes the means of transferring the disease of one individual into another, and even the animal matter of the transplanted tooth may, under certain circumstances, prove very injurious by undergoing putrefactive changes. In view of all these evils, uncertainties and dangers, we must discountenance the revival of the discarded system, which could only have found favour in past times, when art, science and the morals of society were at a very low ebb, and which must be strongly condemned by the free and enlightened spirit of the present age.—*Cincinnati Commercial*.

American Dental Association.

SIXTEENTH ANNUAL SESSION OF THE AMERICAN ASSOCIATION.

The sixteenth annual session of the American Dental Association was opened in the chapel of the M. E. Church, Broad and Arch Streets, Philadelphia, Tuesday, August 1, 1876.

Dr. A. L. Northrop, of New York, occupied the chair. The other officers are :—

First Vice-President—H. J. McKellops, of St. Louis; Second Vice-President—H. A. Smith, of Cincinnati; Corresponding Secretary—J. H. McQuillen, of Philadelphia; Recording Secretary—C. Stoddard Smith, of Springfield, Ill.; Treasurer—N. H. Goddard, of Louisville, Ky.

Executive Committee—L. D. Shepard, of Boston; M. H. Webb, of Lancaster; George L. Field, of Detroit; A. H. Brockway, G. R. Thomas, G. H. Cushing, M. H. Webb, G. C. Daboll, T. L. Buckingham, and S. B. Palmer.

The proceedings were opened with prayer by Rev. Dr.

Morgan, of Nashville, Tenn., after which the minutes of last year's session were read and the roll of members called.

The following resolution, offered by Dr. L. D. Shepard, of Boston, was adopted :—

Resolved, That dentists, not residents of the United States, whose names shall be approved by the Executive Committee, be invited to seats in the Association and to participate in the discussions.

In accordance with this resolution, Drs. Erastus Wilson, of Havana, Cuba ; T. J. Thomas, Madrid, Spain ; J. Carlos Gardiner, Madrid, Spain ; Wm. A. Vice, Leicester, Eng. ; W. H. McGrath, Brazil ; N. Emmons, Chili ; George Cunningham, London ; W. St. George Elliott, Yokohama, Japan, were introduced to the Association, and the former read a short address.

The Committee on Physiology, not being quite ready to report, on the call of the Chair, the regular order of business was on motion suspended, and Drs. John Allen and A. H. Brockway, who were a special committee to consider the effect of dental practice upon the health of the dentist, reported through their chairman ; Dr. Brockway also furnishing an essay on the subject. The report asserted that the peculiar nature of a heavy dental practice tends to over-tax the system more than other professions. This is not only due to the close confinement to which dentists are subjected, but also to the intricate, long and trying operations which they are continually called upon to perform, and to their neglect of certain established universal and irrevocable laws of nature.

In the practice of medicine there is a constant variation of employment, and a constant change of air and scene, which renders the practice of the physician far more healthful and less taxing than the operations of the dentist, often difficult and annoying, and conducted altogether in the house. In some cases dementia results. The use of narcotics and stimulants was denounced ; they should be avoided, particularly by over-worked dentists, as the habit once established an increased desire for them is manifested and their baneful effects produced. They enable the system to use up its stored force—that is, to borrow from itself ; this loan, however, must be met, otherwise physiological bankruptcy results. A special recommendation was that operating-

rooms be arranged with a close regard to ventilation, and also that the office hours be lessened and more time devoted to recreation.

Dr. A. H. BROCKWAY'S paper, treating the subject of "The Health of the Dentist as influenced by the Modern Mode of Practice."

A well-grounded belief is established that the practice of dentistry unduly taxes the energies and strength, lowers the standard of health in its followers; hence, this Association appointed a special committee to examine the subject, and the means (if any) for conserving the health of dentists.

The purpose of his paper was to show that because of the improved methods of practice, there is a better outlook for the dentist of the future.

The melancholy statistics of the committee's report would tend to alarm us for ourselves or our friends. A marked improvement has taken place in these methods in the last decade, both in the ideas which govern them and in the means and instruments employed. In reference to the change in ideas, the prominence which has of late been given to the subject of amalgam has been observed by some with regret. From being almost proscribed, it comes back to the ranks, emancipated and disenthralled by the genius of scientific and unprejudiced investigation, and takes its place as a valuable and indispensable adjunct in saving a large class of teeth. The change in this respect has been for the benefit of the practitioner in a physical point of view, at least, as it saves hours of exhausting effort required in restoring with gold pulpless and more or less broken-down teeth. Another example, not so marked, is the more general use of non-cohesive foil, and the combination of gold and tin, by which the comfort and convenience of the operator are promoted (irrespective of their merits, as compared with cohesive gold), involving far less time. More enlightened and intelligent ideas upon the treatment of nerve cases and irregularity, wedging, &c., also lighten the burden of the practitioner. The employment of an assistant at the chair is also conducive to the relief of the operator, saving him a hundred little steps and movements, besides running the engine and malleting his fillings. The recent approved appliances—the mallet, the rubber dam, and the engine—are doing a vast and incomparable amount of good

to the profession in the matter of physical well-being, besides subserving the interests of the patient. They not only relieve the severe and protracted muscular effort, as is the case with the mallet and engine, but the dam spares the mental anxiety attendant upon the operation of filling with napkins—which is far more exhausting than the physical exertion. These means are destined to work powerfully in favour of the dentist, by lessening and abbreviating his labours, leaving him more leisure to enjoy out-door exercise and recreation.

The discussion of the subject of the paper from the Committee on the General Health of Dentists was opened by Dr. C. E. Kingsbury, who said that this was a very important subject, as he had found in his own case. The dentist suffers from too close confinement. Brawn is as essential to him as brain, and this he endeavours to gain in his own experience by taking a vacation of some weeks in the summer. If there is any profession which taxes the nervo-muscular system, it is the dental. If the lawyer and the clergyman require a vacation, so does the dentist, as much or more. We live upon too high a grade of social life, in too great a degree of refinement, which does not contribute to health and longevity. Such men as Agassiz, Holmes, and Emerson have set us the example of leaving the haunts of civilisation and going to the wilderness, where they can breathe the free oxygen of nature. The speaker has found great benefit from this course. He spends his vacation among the lakes and mountains, engaged in angling, which is enjoyment and recreation. This course contributes to happiness and efficiency; the loss of the time is compensated by increased health, and if the dyspeptic and exhausted would follow the plan, they would be renovated and recuperated. The remarks of Dr. Allen in regard to stimulants are gratifying, and their truth must come home to us. There is a growing tendency in this country to the use of spirituous liquors, even among the gentler sex. The medical profession can fix their eyes on numbers of their talented members who have gone to a premature grave from alcoholic stimulants. They are good in their place, but their excessive use is evil, and that danger must be guarded against. Though producing a temporary brilliancy, yet a reaction occurs which carries the system below the point of exhaustion. If any class of men should abstain, it is our profession. How can we have

a clear brain and a steady nerve if we do not? We must preserve our systems in their best state.

Prof. BARKER, of Philadelphia, said that he was disappointed at the position of the Committee, although he agrees with some of their views; they have ignored facts. Doubts that the profession is so exhausting; there is, in his opinion, no profession better calculated to prolong life and develop the faculties; and those now entering it will yet see that this is the case. The chairs in use twenty years ago were low and wide, and the position occupied by the operators then was painful and constrained. Now what do we see? We must have an unrestrained peristaltic action of the bowels, and the man who has produced a chair that enables the operator of to-day to have this, as the chairs now in use do, deserves the gratitude of the profession. The profession of dentistry develops the man; calls for skill, ingenuity, and thought, a high action of the brain and of the physical system. Besides this, the patients with whom we have to do belong to the best classes, and mould, elevate, and increase the vital force. We may, to be sure, have a child, or some other exhaustive patient; but the next one gives strength. One reason for the prevalence of dyspepsia among us is that we ignore the simplest laws of health; we operate from morning till dinner-time, rush down to dinner, bolt our food, over-tax the digestive apparatus, occupy a constrained position, and divert the blood, which the experiments of Beaumont show should normally flow to the capillaries of the stomach after eating; this blood we divert to the arms and other parts of the body. He has met dentists from all over the country, and they spend as little money in the bar-room as any other body of men; the proprietors of hotels say this also. Alcohol, as a medicine, is priceless; in consumption and some other diseases it is the main reliance.

Prof. FLAGG, of Philadelphia, said he knew all about the effects of rum and tobacco; for fifteen years past he had known nothing of them practically; he could speak from experience of both sides, and testifies against their use. Does not believe in the productive power of alcohol; has never seen a case where its internal use has been beneficial; but, on the contrary, has seen any number of cases carried to the grave by it.

Dr. BARKER said he wanted to be understood that he is not an advocate of the use of rum and tobacco; but denies

that the best writers do not claim that alcohol has certain nutritive properties.

Dr. WETHERBEE, of Boston, is surprised to hear Dr. Barker advocating the doctrine that there is nourishment in alcohol. Our best American and foreign writers, who are level-headed, conclude that alcohol does not nourish. That conclusion is just and cannot be controverted. The ground has been well gone over in the papers read, and he wishes to hold up the writers' hands. Among the resources of recovery from exhaustion he would place prominently a horse, used both under the saddle and in the carriage. Horseback-riding for the dyspeptic is best, and the harder the horse the better the exercise. He himself uses both. Walking after work he finds fatiguing. Smoking and chewing are generally to be eschewed, though there may be cases where tobacco is a remedy for a terrible disease, and the only known remedy. He has been made sick by the fumes from a patient, which may do more in three hours to break down health than three days' hard work. If he had had the modern inventions thirty years ago, he would have saved several years' time ; by the old style of operating the dentist's days were shortened and made unendurable.

Dr. KINGSBURY, of Philadelphia, said that he had not found horseback exercise to compare with the benefits to be derived from the forest and stream. He amuses himself on these excursions by carrying an instrument for measuring the miles he walks, and an aneroid barometer for measuring heights.

Dr. MORGAN, of Nashville : It has been assumed that the refined habits of modern society have deteriorated the public health. That is a wrong name ; it is not refinement which has done it, but dissipation, and a disregard of the laws of life and being. He cannot answer for Philadelphia in regard to spirits, but he defends the female society of his State, as well as the male, from the charge of an increasing use of spirits ; it is eschewed, and not found on the tables even upon New-year's day. He was not aware that dyspepsia is peculiar to our profession ; but if we follow the advice which has been given us, to go to the chair in the morning, and work till night without eating, we shall be dyspeptic. Fourteen dentists have died in his State in fifteen years, and of that number ten died of consumption, in a region where that disease is not prevalent ; three of the

others died from urinary trouble, and out of eight now in bad health, six suffer from lung trouble. There is a want of free oxygen—pure air—and full nourishing food at proper intervals. There is a constrained position, even with improved appliances, and the abdominal organs suffer. Is astonished at the position of Prof. Flagg in regard to alcohol. The ablest men have not been able to manage typhoid and cholera without it; in the Southern country no intelligent physician proposes to dispense with it.

Dr. REHWINKEL, of Chillicothe, Ohio: The points of the last paper are well taken. He wants to raise his voice against the idea that our profession is a trying one. When we meet our old friends of fifteen or twenty years ago, we find them looking so fat and hearty, and so much better than heretofore, that we can hardly recognise them; they do not look as if their profession had exhausted them. Climate and locality have a great deal to do with it. No writers, except Flagg, in his "Pathology and Therapeutics," have touched upon it.

Prof. STELLWAGEN, of Philadelphia: Each position has a certain degree of justice. A certain amount of alcohol is sometimes necessary to stimulate, when the assimilative power is dormant and old cells must be used over. A temporary bridge over a stream is sometimes necessary; so it is sometimes necessary to bridge over a failure of the vital functions. But no physician should ever recommend the use of so powerful a drug without controlling it by stipulating the dose. That is the true medical use of alcohol. To prescribe a glass of whisky at dinner means whisky *ad libitum*. To work hard all the year is a prodigal manner of living. When a machine needs oiling, it is better to stop the factory before it breaks down. He finds it better to take his vacation as he goes along, rather than to work three hundred days and then search for health sixty-five days. He reserves one afternoon a week, besides Sundays, devoting the half-day to various kinds of recreation. He had learned not to carry his business home with him. Concentration can only be kept up for a certain length of time. It is suicidal to eat heartily in the middle of the day.

Dr. THOMAS, of Detroit, said that he had found his health ruined under his former practice of walking a mile to his dinner at one o'clock. He had changed his mode of life:

has his office at his residence, goes to his chair at eight o'clock, operates till two, has an hour for consultation, and dinner at three, after which he does no hard work.

Adjourned till two o'clock.

AFTERNOON SESSION.

The discussion of the papers read in the morning was continued.

DR. McDONNELL, of Pennsylvania, thought Dr. Allen might be misunderstood; he did not suppose he would object to the use of alcohol as a medicine. Admitting its medicinal value, what medicines are properly used constantly? Dentists must obey the laws of nature, and not be interrupted at their meals. Having his office in his house had resulted in loss of health to him, and he now walks to his meals. It is essential to be clear of patients at these times. One man, however, may be able to endure what another cannot.

DR. STOCKTON: The special committee was appointed on the ground of the alleged insanity of dentists. Our calling does not make men insane. Some things lead in a measure that way, and should be avoided if possible. At some times and for some patients we can work with more ease and more successfully than at other times; we should then change patients, for if we operate for those not in accord we shall injure ourselves. As to liquor, the moral sentiment of the community has changed for the better.

Prof. D. D. SMITH, of Philadelphia, knows of no statistics by which we may judge of the healthfulness or otherwise of dentistry. Dr. Morgan's remarks were of that nature, and if followed up would be interesting and useful. He regards the calling as one tending to shorten life. Of the learned professions the clergyman is the longest-lived, the physician next, and the lawyer next. True advancement in civilization and mental culture tends to longevity. That people attains the greatest average years which attains the greatest mental culture, while living upon true temperance principles. The improvement in dentistry is not due so much to appliances as to the advance in intellectual attainments. Societies and colleges have lifted the calling to a position of great respectability since 1839. There has been a general eleva-

tion of tone throughout the profession of the country; and to it is due increased longevity.

Dr. ATKINSON: If we could lay aside partisan feeling and endeavor to get at what constitutes food, poison and remedy, we should be more likely to arrive at correct conclusions. We hear on the one hand that alcohol is nutrient, and on the other that it is a poison. We do not know enough to assert positively what becomes of certain substances that disappear when introduced into the system. Anstie says that most of them may be collected, but still there is a portion lost. He goes with all who go against the use of alcohol, but does not want to tell a lie to bolster up the truth; he would rather be a simple *truthist*.

Prof. MCQUILLEN, of Philadelphia, questions the statements of Dr. Allen as to the exhausting effects of our profession, and its tendency towards insanity. He questions the propriety of mentioning names, as did the paper of last year. The question is, Is it true? We have too limited a basis of statistics to say definitely. But the evidence seems to prove that it is in the rural districts, among the farmers, that the greatest amount of insanity occurs. Our profession is not more exhausting than any other followed with devotion. Men fall martyrs to other callings so followed.

Dr. MCQUILLEN then followed with the report of the Committee on Physiology. The report treated on the topic of "The Eruption of the Deciduous and Permanent Teeth," and stated that there were rare cases on record of children having been born with teeth, but usually the central incisors make their appearance between the sixth and eighth months of infancy, the lateral incisors between the seventh and ninth months, the first molars between the fourteenth and sixteenth months, the canines between the seventeenth and eighteenth months, and the second molars between the twenty-fourth and thirtieth months. About the period of the eruption of the first molar, a systematic disturbance occurs in most cases caused by the tooth, in its efforts to erupt through the gum, being compressed by the resistance of the gum upon the pulp, producing the consequences through the medium of the fifth pair of nerves. In explaining the method of eruption and disappearance of the deciduous teeth, and the mode of eruption of the permanent teeth, he called attention to the fact that his own comparisons with the recorded observations of Messrs. John Tomes

and Edwin Saunders, of London, had manifested that eruption of the permanent teeth in America occurred considerably earlier than in England and France, thus seeming to indicate a precocity in favour.

In speaking in relation to Dr. McQuillen's paper, Dr. Atkinson said that it had been established by authority that twelve times the limit of the shedding of the central incisors is the normal length of life. Therefore an early development in this respect was indicative of brevity of existence, while a later development seemed to predict longevity.

The Introductory Addresses.

WESTMINSTER HOSPITAL.

The Introductory Address was delivered by Dr. W. H. ALLCHIN, Senior Assistant Physician to the Hospital.

Referring to the fact that two of the largest schools had recently seen fit to discard the customary "Introductory," the lecturer considered that it had become necessary to put forward any plea there might be for its continuance. Quite willing to say "Away with them," if they could be shown to be harmful or useless, he maintained that, if productive of good or in any degree necessary, they should be continued. And good he was of opinion they do bear, not perhaps to older men, who are past being susceptible to words of welcome or encouragement, but to the younger ones, often fresh from school, and requiring something that shall be a silent infelt stimulus to them in facing their work; such a stimulus judicious words might be. On another and equally important ground is the annual address to be recommended. Within the past few years, the questions of general interest to both the public and the profession have considerably increased in number, and opportunities are of necessity demanded for the treatment of such questions from the professional point of view. Such an opportunity is afforded by the present ceremony, and none the less conveniently so that the public have come to look for utterance on this occasion.

The actual subject-matter of the address was the position of the healing art as a saleable article, the character of those who purchased it, and the qualifications of those who practise, *i.e.*, sold it. The practice of medicine, which has for its object to prevent, to cure, or to alleviate bodily suffering, differs in a most marked manner from any other scientific pursuit which intimately concerns the community in the extremely uncertain foundations on which it is based; and this uncertainty is due to the changing and progressive character of the many sciences which form the groundwork of the profession. The more indefinite an art is, the more does it rely on the natural capabilities of its exponent. Medicine being so thoroughly of this character, a grave responsibility is thereby imposed on the practising of it. Imperative is

it that, through no deficient knowledge on the part of the doctor, the too small meed of relief he is able to extend is diminished. An additional claim for as complete excellence as possible on the part of the medical man is the attitude of the public in respect towards himself and his art. This attitude is one of almost absolute ignorance with an equally blind confidence; the former unavoidable from the very nature of the subject, the latter demanding all his care lest he abuse it. With an all-demanding public, asking, in their ignorance and trust, for impossibilities; with a growing art vastly deficient in power to the forces with which it copes. Strongly does it insist that the practice of that art should be of the very best that is possible, that he may make up, as far as may be, in himself for the imperfections of his calling.

In considering how far the average doctor is equal to the demands made upon him, there are many things to be taken into account. His natural fitness and the circumstances which may have determined his entering the profession, how far his course of education is suitable, and whether the examinations are the best that can be devised. There can be no doubt but that many enter the ranks of medicine without any thought of their natural capabilities, but simply look to it as a means of livelihood, and, so far, do but little to elevate the general standard of the profession, however successful they may be in their individual practice. Many of them spend the minimum time in the schools, and certainly are not so good as they might be made. So far as the education is concerned, there is no doubt, in the opinion of the lecturer, that the period devoted to systematic study is far too short. It is less rather than more than it was forty years ago, since when the subjects have more than doubled in extent, and been largely added to in number. As the direct result of this high pressure imperfect work comes "cramming," without which it is almost impossible to pass the various examinations for a diploma within the expected time. The evils connected with the examinations, apart from their determining, to a very great extent, the period of study, such as their multiplicity, their incompleteness as tests of knowledge, and, lastly, their having come to be regarded as ends rather than means to the acquisition of knowledge and mental culture. On all these grounds, the lecturer was of opinion that the question of how far the average doctor is equal to the demands made upon him is not altogether so satisfactory as might be wished. He put forward this with all due consideration and deference, the more especially as the remedy, as would seem recently to have been proposed by Dr. Farre, for the dearth of doctors is a lowering of the standard of education. Finally, the lecturer could not help thinking that the unworthy treatment in honours and in pay received at the hands of the public by the majority of the profession would not be submitted to so quietly did the profession feel more conscious of its worth, and did the public not regard us as not so good as we might be.

LONDON HOSPITAL.

Dr. ANDREW CLARK, Senior Physician to the Hospital, delivered the opening Address. After dwelling upon the ground covered by medicine in its relations to the individual, to society, and to the State, he said:—"Medicine not only involves vast interests—it establishes, and

for its existence it must maintain, and for its progress it must continue to multiply, the most intimate relations with every other form of knowledge. There is none into which it does not lead us; none with which it does not necessitate some degree of acquaintance; none which does not lend it aid. Nor is the entire domain of the physical sciences sufficient for its needs and purposes. With the facts of the mental and of the moral worlds it seeks as close and holds as necessary a relationship. And thus throughout the whole realm of nature medicine lays down its lines of inquiry and establishes its channels of communication. It is the metropolis of the world of knowledge, and we are the privileged denizens thereof. Here we are brought face to face with the mysteries of nature, of life, of man, and of the Eternal which enfolds them. Here, in the light collected from every lamp of science and converged into a focus upon them, we may discuss the loftiest problems which can engage the mind of man. And here, in the seeking after truth, and in the doing of good, we may open for ourselves sources of interest and of happiness greater and more enduring than any other that the world can supply." The lecturer then treated of experimental inquiry as a necessary and, for the present, the chief means of advancing both the science and the art of medicine. After enumerating the functions of experiment, and showing the necessity of checking its results by clinical observation, he adverted to the suffering inflicted upon animals, and the responsibilities which it imposed upon experimenters. Touching upon recent legislation and its probable effects upon education and science, he expressed his alarm at the prospect of a fresh crusade in which "no quarter was to be given and no peace concluded until the liberty of experimenting upon animals was unconditionally extinguished;" and continued:—"It is hard to understand the reason of such a passionate antagonism, and still harder to believe that it has no other foundation than the desire to protect inferior animals from unnecessary suffering. For, if this be so, why do our antagonists confine their warfare within such narrow limits? The infliction of suffering for ulterior ends—everywhere visible in nature, now adjusting the balance of nations, or settling the autonomies of peoples—pervades the whole structure and relations of civilised life. What are all the sufferings inflicted by all the vivisectionists of all the world in comparison with the hecatombs of suffering which political experimenters have inflicted upon mankind in their attempts to settle the question of the balance of power in Europe? Are the sufferings of men of less account than the sufferings of brutes? Or is their blood less precious? Are the countless woes of countless human hearts to be reckoned but as dust in the balance against the wounds of guinea-pigs and frogs? Why is it, then, that the assault is not co-extensive with its object? Or, if it is the plan of our assailants to defeat their enemies in detail, why are we to be made the first and bitterest objects of attack? It is not from wantonness, it is not for ease, or pleasure, or gain, that we make the subjects of our experiments suffer—it is assuredly for the advancement of science, and it may be for the good of mankind. Surely the love of knowledge is as true a human desire as is the love of sport; and while the fruits of this die with the individual and his interests, the fruits of that live for ever in growing uses to the race. If this question is to be reopened, it must no longer be confined within the narrow limits which our

adversaries desire. But if it be otherwise, if hostilities are to be renewed on the old lines, with the old tactics—if again the freedom of experiment is to be the sole object of attack, then I trust that every member of this great profession, and every thoughtful man beyond its pale, will make this cause his own, and will offer to threatenings of fresh legislation such a united, earnest, and implacable opposition that the statute-book of England shall never again be sullied by penal enactments against the just liberties of men. The highest heritage of humanity is in our keeping. All the past and all the future conspire to make us loyal to the sacred charge; and at whatsoever cost of whatsoever kind we must hand down the freedom of experimental inquiry unmortgaged to future generations.”

The rest of the address was taken up with practical suggestions to the students as to their studies, and directions how to elevate and ennoble their professional life.

MIDDLESEX HOSPITAL.

Dr. G. H. EVANS, M.A., delivered the Address at this hospital. After a few preliminary remarks he proceeded to give some advice to students, laying great stress on the necessity during their hospital education for taking every opportunity of doing practical work. There was not one of the subjects with which they had to make themselves acquainted which could be learnt only from books and lectures. They must, in the case of every one of them, familiarise themselves with the practical application of the principles laid down in books and lectures; remembering that, in the exercise of their profession, they would have to treat individuals, not diseases; that in no case which they might be called upon to attend would they find a cut-and-dried method or a hard and fast rule of treatment available. Speaking of their actual entry on a professional career, he suggested that in all probability there was a brighter prospect for the coming members of the medical profession than had been open to those of the preceding generation; that their services were likely to become better appreciated by the public, as well as by private individuals. He then made some observations on the alleged inferiority in social *status* of the medical as compared with other professions. Where this opinion existed it was probably due to unfair comparisons between individual members of different professions, though there were instances of a kind of deterioration in some cases, where want of means, want of opportunity of mixing in good society, and other causes had combined to drag a medical man in general practice in a provincial town down to the social level of the tradesmen who formed the majority of his clients; and, undoubtedly, the unwillingness of the public to appreciate properly and to remunerate sufficiently the services of medical men had had a good deal to do with the difficulty experienced by some members of the profession in keeping themselves clear of some of the lowering influences to which he had alluded. As a proof that his profession had not really to any extent deteriorated, he referred to the number of its members who were working unselfishly and honestly, with very little substantial reward; believing that there is no profession in which so much unpaid good work is done by men who can ill afford to give their hard-gained experience for no return but the satisfaction of knowing that they are benefiting their fellow-creatures. After referring to the necessity for more general education and culture among

medical men, he said:—"Give your whole undivided attention to every case that is brought before you, and do not leave it till you have really satisfied yourself that you have ascertained all that is to be ascertained about it. Give your skill and experience as freely to those who cannot afford to remunerate you as to those who can and do. Always bear in mind that you have to keep up your own reputation and that of the noble profession to which you belong; treat every one with whom you come in contact with the courtesy and kindness with which you would like to be treated yourself; and, even supposing that you do not meet with much substantial reward, you will yet have the satisfaction of feeling that you have done your duty fearlessly, honestly, and unselfishly."

ST. THOMAS'S HOSPITAL.

Mr. FRANCIS MASON, F.R.C.S., Senior Assistant-Surgeon and Lecturer on Anatomy at the Hospital, delivered the Inaugural Address on Monday, October 2nd. After some prefatory remarks, the lecturer said he was unwilling to draw any invidious comparison between the work done at this and at other hospitals, when there was so much evidence that all were working so nobly for the general good of mankind; but in reflecting on the antiquity of the hospital, and in contemplating the names of the many eminent physicians and surgeons who in former years laboured so gloriously in its suit and service, he had no difficulty in finding a suitable theme for consideration. He then gave a brief, but nevertheless a very interesting, account of the rise and progress of the hospital. It was one of the Royal Hospitals, and was established as an almshouse in the eleventh century, on the site of the present Charing-cross Railway at London-bridge. He then referred to the fact that the distinguished anatomist and barber-surgeon, Cheselden, was a pupil, and afterwards was appointed surgeon to the hospital in 1719. Alluding to Cheselden as a barber-surgeon, he stated that in the eleventh century medicine was entirely in the hands of the clergy; for example, William the Conqueror was attended by a bishop and an abbot, and the surgeons to King Henry VI. were barbers, and his physicians priests. The barbers were, indeed, originally introduced to surgery by the priests, whose heads they shaved. He then referred to the relic of the barber-surgeon as seen at the present day, in the pole which is observed outside the hair-dressers' shops where they profess "easy shaving." The pole represents the staff which the patient grasped in order to accelerate the flow of blood in the operation of venesection. The stripes, red and blue, which decorate it, are symbols of the venous and the arterial blood, and the white line indicates the bandage that was applied to arrest the hemorrhage. He then spoke of the Act of Parliament passed in 1714, by which the barbers and surgeons became two distinct corporations. On the separation, the barbers retained the old hall, books, paintings, and records, and thus the surgeons were left homeless, and without property. They had even to borrow money to build a hall in the Old Bailey, on the site of the present Sessions House, and subsequently they removed to their present abode in Lincoln's-inn-fields. Reverting to Cheselden, Mr. Mason stated that the celebrated John Hunter was one of Cheselden's pupils, and that Dr. Edward Jenner's grand discovery of vaccination was first applied in London by Mr. Cline, senior, at St. Thomas's Hospital, in 1798. Mr. Mason

then referred to other illustrious men who had been connected with the hospital, including the names of Dr. Richard Mead, Sir Astley Cooper, Dr. Mark Akenside, the poet, the renowned Dr. John Lettson, and others, men who have proved themselves benefactors to science and mankind, and whose self-reliance, industry, and perseverance all might well emulate. Both Mead and Cheselden, said the lecturer, attended Sir Isaac Newton, and "won golden opinions of all sorts of people," but by none were their talents more appreciated than by Pope, the poet, who referred to them in the following complimentary terms :—

"Weak though I am in limb and short of sight,
Far from a lynx and not a giant quite,
I'd do what *Mead* and *Cheselden* advise,
To save these limbs and to preserve these eyes."

Addressing himself then more especially to the pupils who were commencing their studies, he reminded them that the student should at once be imbued with the all-prevailing truth, that there is no royal road either to learning or to success in the medical profession. Money might assist to a certain extent, but it was of little value to further the progress of science without the closest application and persevering and sustained industry. Work was all-important in every calling. "We listen," he said, "with wrapped attention to the learned divine. We marvel at the brilliant oratory of the illustrious statesman. We gaze in wonderment on an historical picture, in which all the details, with appropriate costumes, are depicted by the artist with the utmost accuracy and precision. We admire the actor, who 'holds as 'twere the mirror up to nature,' and places before us the characters of England's mighty dramatist with vigour and truthfulness, representing the 'very age and body of the time.' But such conquests were not won, such triumphs were not achieved, without incessant labour and unflinching perseverance."

The lecturer then referred to the labours of John Hunter, of Michael Faraday, and of Harvey, the discoverer of the circulation, and impressed upon his hearers the importance of being self-reliant and of being accurate in their work. Truthfulness and good principle, purity of motives, and prompt decision were imperatively demanded for success in any walk of life. Great wealth and high honours, although open to all, were, he said, practically given to few in our profession; yet he expressed his own honest opinion that there was no calling in which a fair competence is so speedily acquired as in the medical profession.

"Let me add, in conclusion," said Mr. Mason with much earnestness, "to all who are now studying here, that whether your life be a success or a failure, I confidently hope you will never lose sight of the moral influence and discipline inculcated at this hospital. In life's campaign you will necessarily meet with many vicissitudes to impede your progress, and you will have to contend with and conquer numberless difficulties; yet when the fiery fight is o'er, bear away the emblem of your victory, and you will, I feel sure, look back in your leisure moments with pride, reverence, and thankfulness to your Alma Mater, gratefully remembering the happy days you have spent here, and recognising with intense satisfaction the many lifelong friendships that you have had the opportunity of forming."

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

The Dental Profession an Anomaly.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—When the Sub-Committees of the Odontological Society and the late College of Dentists appointed to negotiate the terms of a union between these two bodies met on the 22nd of December, 1862, and amicably concluded their labours, a feeling of confidence animated all parties in the profession, and an encouraging belief sprang up that the dental millennium had at last arrived.

Those who advocated the foundation of an independent institution, emanating from and governed by dentists, worked hard to carry out their views. They spared neither time nor money, but honourably laboured as long as that labour appeared to them to be calculated to raise the status of the profession and promote unity among its members. More than this, they endeavoured during the year 1860 to obtain the opinion of the medical profession whether an independent institution of dentists was or was not in accordance with the wishes of that body, and they obtained the signatures of over 3,000 members of the College of Surgeons, affirming that the organisation of the dental profession would be best accomplished by founding an independent institution, instead of making dentistry merely a medical speciality; but the voice of the dental profession appeared to be in favour of a union with the medical body, and on the 22nd of December that union was effected. The College of Dentists determined to waive all personal considerations, as the majority in the profession considered that the College of Surgeons having organised a special charter for the purpose of granting dental diplomas, the recognition of the dentist was ensured, and one of the main objects they had in view attained.

Turning from this period to the present time, how painful it is to reflect that some of those members who were instrumental in bringing about this union with the Odontological Society, and also in obtaining the qualification they

then considered all-sufficient for the dental practitioner, now appear to ignore its very existence.

Your leading article in last month's issue, addressed to the dental student, seems calculated seriously to dishearten all those who have worked to attain professional unity, and as one of the joint committee instrumental in uniting the College of Dentists to the Odontological Society, I consider myself privileged to warn those of our body who might be led astray by the statements of that discontented section who wish to ignore to-day what yesterday they strove to obtain—who, like wayward children, appear merely to build their house of cards that they may have the pleasure of scattering it to the winds again—that the profession cannot afford to play fast and loose with its vested interests. Let the dental student, before he becomes seriously disheartened, listen to the words of one (also on that committee) whose great experience and known love of his profession merit for all he says undivided attention. Mr. Tomes, in a letter addressed to the *Lancet*, and copied into your Review—a letter which should be read by all who have the status of their profession at heart—says, "The licentiateship is the qualification needed by the dental surgeon, for no other indicates that the possessor is practically acquainted with dental surgery."

The sooner the members of the dental profession are made not only to understand, but to respect, the degree of L.D.S., the better it will be for the community at large; for it has become the fashion of late to try and underrate the value of that diploma, and to hint that the curriculum for its attainment is more easily passed than that conferring the membership of the College. Let any one dispassionately compare the two courses of study, and I think they will arrive at a contrary opinion. They are thoroughly distinct yet equally arduous, but the dental degree becomes an absolute necessity to all those students who desire to call themselves dentists.

But while we on our part desire to uphold the L.D.S. diploma, we should jealously guard against its being treated as though it possessed less value than the full membership. The list of names of those gentlemen passing the College of Surgeons as members is noted in the daily papers, and the degree of L.D.S. *originally* received the same recog-

dition. Now it is the practice to publish the list of members only. Indeed, even the medical papers, with one or two exceptions, have of late passed over the licentiates as beneath their notice. If we desire to keep up our *status* as dentists we should inquire why that practice has been departed from, and whether it is at the instance of the Council of the College of Surgeons or merely a neglect on the part of the Secretary.

In the union that took place on the 22nd of December, 1862, the College of Dentists amalgamated with the Odontological Society, and we are equally bound to uphold that body as a *society* so long as it carries out the objects for which it was founded. Whether we are justified in advocating its taking to itself "political responsibilities" is a question that may shortly require consideration; but one thing is evident, the time has come when increased activity is demanded, and a greater inducement should be held out to the profession to become members. Why it should remain the most inactive and the most expensive of all the learned societies, and to what purpose its large surplus income is to be applied, are questions of vital importance at the present time.

It must always be a pleasure to reflect upon the good we have tried to do, whatever may be the result; and I would most earnestly beg those gentlemen who are now causing discord in the profession to consider their acts. Can they bring themselves to believe that posterity will remember with satisfaction the differences they are raising? When the late College of Dentists dissolved the institution they had reared with so much toil and at so great a cost, believing that by doing so they would promote unity among their professional brethren, by that very abnegation of self they earned the respect as they merited the good will of all parties. Is this lesson to be entirely thrown away? I hope not. If we but rally round the qualification we have created and support the society we have established, I firmly believe we shall soon silence all detractors and may yet see ourselves what we all ardently desire to be,—a qualified, united, and honourable profession.

Believe me, Sir, yours truly,

FELIX WEISS.

7 Montague-place, Russell-square.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—In am pleased to think you have, in your last number, published, *in extenso*, the advertisement of May 2nd, respecting the Dublin Dental Dispensary; for though it is the heading only of the prospectus, with a line or two necessarily added to explain its object, it is sufficiently explicit to give your readers an estimation of its character and intentions, and of judging whether the question which has given rise to this correspondence as to "what was done for those who are not absolutely poor?" is at all justified by the tenor of the advertisement itself, and whether I have not answered it in your previous number in language which could not be mistaken nor refuted.

Institutions, dependent more or less on the assistance of the charitable, do not hesitate to make extensive appeals, especially at the commencement, and from time to time afterwards, as funds may be required, to the influential and the wealthy, by the aid of prospectuses and through the medium of the newspaper press.

The Dental Dispensary has observed no exception to this admitted rule, and, without obtaining a degree of publicity, it might fail in this manner from want of the pecuniary assistance so much needed; but I cannot understand that this should be a subject with any one to animadvert upon, especially as the Dispensary is open to the inspection of medical men, the dental profession, and the public at large, who are invited to see its working and convince themselves that the contributions are deservedly bestowed and properly administered.

This institution, then, cannot be said to send out prospectuses with grandiloquent phrases of what it is going to do, nor does its establishment savour of anything of the back-parlour proceeding. Has jealousy (and not so much the heartfelt cause of dental progress) anything to do with the random remarks which are now being called forth, and will that aid the dental cause in Dublin? Is it because the Dental Dispensary is the first of its kind in Ireland, and has been in existence some time, and above all that it is found to be meeting with a degree of success, that some of the Dublin dentists, in the excess of their philanthropy, feel grieved at it? Why should this be? As they could have taken the initiative at least any time within the last dozen or even twenty years, and no one would have cavilled at it—at least I should not—and I should only have been too glad, as I have ever been, to join

any movement which had education as well as charity for its objects. But when the preliminary appeal for aid was made through the public press, not a single Dentist showed the least sign of vitality, nor responded to the call in any way. There may be very worthy members to be found amongst the Dentists, which I do not question ; but I did not care to go cap in hand to them all, and there seemed to be a difficulty of one kind or another to induce a body of men like those composing the Dental profession of Dublin to combine and act in anything like concert. It may be different now, but before they could be induced to give up their personal wishes (possibly each desiring at first to hold some coveted appointment) the scheme would have fallen to the ground, and lain in abeyance probably for another twenty years, had not the Dental Dispensary been taken boldly by the hand and pushed forward to its achievement by the assistance of public charity, and the gratuitous and generous services of its officers. It may not be the perfection of institutions, it may have its failings like others, and like others it is doubtless open to improvement, but, "*factis non verbis*," there it is for the purpose of benefiting the poor as well as for forming the nucleus of a school if desired, where the Dental student of Ireland may find his education. The absolutely needy appreciate the services rendered to them, which they accept and look upon as a right far less humbling to humanity than the assistance they solicited *even twenty years back* from private practitioners, which, however beautiful in the abstract, was more frequently denied them than otherwise, and when accorded was hardly in the spirit of toleration so complacently paraded.

Practical and applied philanthropy cannot be otherwise than commended, and is better than that sort of philanthropy which treats the efforts of others in the same direction with superciliousness, and seems only to tolerate that which emanates from its own creation.

I can only thank you, Mr. Editor, for your courtesy in allowing me to occupy so much valuable space in your excellent columns ; but it has enabled me to reply once and for all to the strictures which have been made, in which I felt that the Dental Dispensary as well as myself were in some measure immediately concerned, and beg to remain,

Sir, your obedient servant,

Dublin, 30th Sept., 1876.

H. CLIFFORD-ESKELL, L.D.S.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM SEPTEMBER 1ST TO SEPTEMBER 30TH, 1876.

Extractions.	Children under 14	-	-	-	-	-	487
	Adults	-	-	-	-	-	610
Under Anæsthesia	-	-	-	-	-	-	189
Gold Stoppings	-	-	-	-	-	-	132
White Foil ditto	-	-	-	-	-	-	29
Plastic ditto	-	-	-	-	-	-	169
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	-	13
Miscellaneous Cases	-	-	-	-	-	-	142
Advice Cases	-	-	-	-	-	-	133
Total							1904

M. L. BELL, *Assistant Dental House Surgeon.*

THE DENTAL SURGEONS ATTACHED TO THE VARIOUS HOSPITALS OF LONDON ATTEND AS FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médical.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

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The "SPECIALITE" Manzanilla					
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VOL. V.

Professional Pride.

It is curious to observe how the unwritten laws of professional etiquette are regarded by different members of the same profession. One surgeon does not hesitate to write up all his qualifications on his door-plate, while another is satisfied with his name alone, or perhaps with the addition of some well-understood initial letters. In our own more immediate specialty there is much of the same kind of discrepancy afloat, with perhaps slightly different results; for while no surgeon would look down upon another for announcing his qualifications, there is among us Dentists often manifested a pharisaical satisfaction—a thankfulness that they are not as other men are—on the part of those who put nothing but their names on their door-plates. That either the one or the other establishes a rule of etiquette is, we think, highly improbable. There is nothing wrong in telling the public that a professional man is to be found within, and such man must be guided in the course which he pursues by the exigencies of his practice.

The further question of putting a professional qualification on a visiting card is also a matter for personal judgment. A doctor designates himself Dr. Brumby, or John Black, M.D. The Rev. J. Doak, with perhaps a D.D. attached, is also *de rigueur*; and the surgeon who puts M.R.C.S. on the card is no less correct, and the dentist who puts L.D.S. on his card cannot be said to be doing otherwise than those who follow the same rule; and yet M.R.C.S. or such like letters are more generally found on the cards of newly-dedged practitioners than on those of longer standing.

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THE MONTHLY REVIEW OF DENTAL SURGERY.

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VOL. V.

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The further question of putting a professional qualification on a visiting card is also a matter for personal judgment. A doctor designates himself Dr. So-and-so, or John Blank, M.D. The Rev. J. Dash, with perhaps a D.D. attached, is also *de rigueur*; and the surgeon who puts M.R.C.S., or the dentist who puts L.D.S. on his card, cannot be said to be doing otherwise than those who follow the course cited; and yet M.R.C.S. or such like letters are more generally found on the cards of newly-fledged practitioners than on those of longer standing.

When a man vulgarly obtrudes his calling upon the attention of others on all possible occasions he is certainly to be condemned; but for a qualified practitioner to openly avow himself as what he is, seems to us, in the present state of things, not only desirable but absolutely essential. We frequently hear of dentists wishing to be considered anything rather than what they really are; but it seems high time, considering the educational progress we have made during the last few years, that those who take a proper pride in their vocation should put aside the affectation of modesty that seems to have possessed them, and be prepared to stand or fall in the estimation of the public and the medical profession as Dental Surgeons, pure and simple, holding as a sufficient qualification the Licence of the Royal College of Surgeons of England. We believe it has been customary hitherto for many of our most esteemed professional brethren who hold the Dental Diploma, to carefully hide it away in some secret drawer or private cupboard, as if its possession were a thing to be ashamed of, and its appearance on the walls of the consulting-room the declaration of a tradesman's pride in an exhibition certificate.

We would earnestly commend to the thoughtful consideration of the profession whether this policy has not been rather damaging than judicious. A vast proportion of the public, nay, even of the medical profession, scarcely know what a qualified dentist means, still less are they acquainted with the character of the only Dental Diploma which is conferred in the United Kingdom.

At a time when those who should be most zealous champions of the dental licence are endeavouring to lower it in the esteem of a small body of men, it is of the utmost importance that those who value the qualification they possess should adopt every means in their power in order that it may be equally esteemed by others. In conclusion, then, we would urge that every practitioner, whatever his position may be, should, by such means as he deems best, let his patients become acquainted with the fact that a Dental Diploma exists; and further, that the entire body of Dental Licentiates should form themselves into an association, by means of which they might maintain the sufficiency of their qualification and promote that unanimity of action and that *esprit de corps* which at the present time seem so sadly lacking.

Abstract of Lectures on some of the more prominent
Anatomical and Physiological Features of a Tooth,
certain Pathological Conditions, and the Treatment
indicated.

DELIVERED AT THE NATIONAL DENTAL HOSPITAL, OCTOBER, 1876,

By THOMAS GADDES, L.D.S.,

Assistant Dental Surgeon to the Hospital.

(Concluded from page 214.)

LECTURE III.

In my last lecture I showed that true dentine was unvascular; yet, withal, there may remain, notwithstanding the normal obliteration of the tissues of the formative pulp, an erratic, persistent capillary blood-vessel conveying red blood. There may also be associated with such a condition a replacement of dentine by true or modified bone. With either one or both of these conditions the structure may become the seat of inflammation, and its terminations or results; but without such conditions being present it would be difficult to account for what has been termed "inflamed dentine." Dentine may be stained red; but, as Mr. Salter has pointed out, if the colouring matter be confined to the matrix the condition is developmental; and if it be contained within the dentinal tubes it is due to the red blood corpuscles yielding their hæmatine, this probably resulting from death of the pulp, and the colouring matter being carried along the tube-contents by capillary attraction.

I did not purpose in these lectures to explain the development of the various tissues of a human tooth; but, as my chief subject for this morning is to be the dental pulp, I think what I have to say will be better understood if I explain to you, and sketch upon the slate, an outline of the main features in the development and metamorphosis of the dental papilla.

At about the eighth week of embryonic life is seen in the sub-mucous tissue covering the jaw a finely granular hyperæmic area, which becomes larger and more distinct. Such is the genesis of the dental papilla, which at this early stage consists of elementary cells, or granules of Purkinjé, embryonic connective tissue, and capillary blood-vessels. As development goes on, nerve tissue becomes demonstrable, and the papilla assumes the form and dimensions to be taken by the dentine of the future tooth. The cells upon the

surface of the papilla become elongated and columnar, and, as such, have received the name of odontoblasts, which, taken collectively, form the membrana eboris. At this stage the papilla, or formative pulp, presents this outer arrangement of odontoblasts, beneath which there are somewhat spherical cells—masses of bioplasm, which appear to recruit, or to be taken up by the bioplasm of the odontoblasts proper, so that no break is apparent in the process or dentinal fibril: blood-vessels, which are largest in the centre, and break up in fine capillary loops beneath the membrana eboris: nerves, which also freely ramify and form loops, but their terminations have not been seen to enter into the tubes or substance of the dentine. These vessels and nerves are interwoven, or supported, by an interlacing fine connective tissue, in the midst of which are some fine cells—granules of Purkinjé, or connective tissue corpuscles.

Now the masses of bioplasm of these specialised cells forming the membrana eboris are in constant motion, moving inwards and converging towards the centre of the papilla or pulp, elaborating “formed material” which is left in their wake, together with a filament from this living mass—the dentinal process of the odontoblast—which is surrounded by the so-called “formed material,” constituting what is termed a dentinal “tube” and its contained “fibril.” Into this formed material is deposited calcareous matter in the form of granules, which increase in size by a further accumulation of calcareous substance upon their external surface, ultimately coalescing; thus converting the formed material into “calcified-formed material”—the *matrix* of the dentine. This latter change would appear to go on more quickly in the outer and greater part of the odontoblast than it does in the central part or neighbourhood of the odontoblast process; and as a consequence of this slower deposition of calcareous matter around the “dentinal fibril,” a much denser structure is produced than the bulk of the matrix is, and this has been called the *sheath* of Neuman. So then matrix, tube-sheath, and tube contents or fibril are three different conditions in the development of an odontoblast—a specialised bioplast. As the process of calcification proceeds, the pulp diminishes in size; the more superficial vessels, nerves, and connective tissue being removed, their structures not entering into the formation of dentine. Their metamorphosis is probably

brought about by the appropriation of their substance by the bioplasm of the odontoblasts and contiguous cells.

In this manner is dentine produced, and the bulk of the tooth elaborated. The formation of dentine is not limited to the period commencing with the calcification of the primitive papilla, and terminating with the appearance of the tooth in the dental arch; but, on the contrary, it is a process which continues until advanced age, or so long as any cellular elements or pulp tissue remain. The dentinal tubes, which are smallest at their periphery and largest at their pulp extremity, gradually become obliterated by the deposit of calcareous matter in their contents or fibrils. This conversion of the dentinal fibril or process of odontoblast, is according to that observed in the original cell, the bioplasm or fibril is converted into formed material, and this into calcified-formed material.

The function of the so-called dentinal tubes is not to convey nutrient material. They are simply spaces in the matrix containing a filament from and a part of the bioplasm of the formative cell, and which has not yet been calcified. You must know that the tube contents have by Mr. Tomes been called the "dentinal fibrils," while Mr. Salter says their contents are a "dense plasma." As I have mentioned in the section on the "Structure of the Teeth," in the "Dental Students' Note Book," I think it is a dispute not so much upon the intratubular substance as upon the term given to the axis of the tube by different writers. However, dentine is sensitive, and the sensitive-ness is conveyed to the pulp by the tube contents and not by any nerve tissue, which has not yet been demonstrated to exist in any part of the dentine.

Having pointed out the structure of the pulp and the mode of the conversion of its cellular elements into true dentine, and also in my last lecture alluded to the formation of osteo-dentine in its substance, I shall leave the subject of its diseases and their treatment till a future time.

In this series of lectures, gentlemen, I have brought before you a few of the subjects of which it is essential you should have a fair knowledge in order to better understand the nature and treatment of diseases of the teeth, and, furthermore, that your treatment be rational. There are many other subjects in dental anatomy and pathology that are frequently embarrassing to the student, and during the pre-

sent session I may again have the pleasure of your attention to my remarks, which during this course has been individually most diligent.

These lectures were freely illustrated by specimens, microscopic preparations, and diagrams upon the slate.

The Use and Misuse of Enamel Chisels.

S. J. HUTCHINSON, L.D.S. and M., R.C.S.

There are very few cases indeed where the enamel chisel can be used safely in the preparation of a tooth for stopping. This seems, no doubt, a startling statement, *pace* all text-books; but after a careful consideration of the matter it will be seen that the greatest possible caution should be exercised in their use, and all cautious operators will restrict the employment of the chisel, and even of excavators, to portions of the enamel, where there is no risk of the cleavage extending farther than is desirable: because on experimenting on a tooth out of the mouth, it will be found that a scratch made on the enamel will extend much farther than is suspected, if a strong magnifier be used; and in the mouth this is still more evident, that where apparently a fragment of enamel is split off, really the fracture has often extended into the sound enamel.

To give an example of the results of the too free use of the chisel, one not unfrequently sees patients who come with bicuspid teeth split in half, which have only been stopped on one side, the chiselling employed in the preparation of the cavity, be it mesial or distal, extending unwittingly its cleft across the tooth, so that in process of time a portion of tooth (commonly the palatal) breaks away.

So strongly is the writer convinced of the danger of a chisel thoughtlessly used, that he is induced to call the attention of readers to this fact; and he would recommend in cases of interstitial caries, between bicuspid especially or molars, that where the practice of individual operators has been to cut in from the grinding surface with a chisel, that this should be abandoned, and the burring engine used instead, a fissure bur (stoned) being more suitable for the purpose, the chisel being reserved for working at either wall of the cavity, where *the cleavage is terminable intentionally at each end of its extent, and that a chisel should never be used*

when one end of the portion to be excised is continuous with sound enamel.

The "stoned burs," especially those called fissure burs, are most admirable for preparing cavities and, retaining their edge much longer than the commoner ones, cause much less discomfort to the patient, and save much time.

It is not merely in so-called interstitial cavities that occasional damage is done to the body of the tooth, but in the grinding surface of molars when the indiscriminate chiselling at a large cavity causes a split in the enamel surrounding, and sooner or later a piece breaks away, endangering the integrity of the plug.

These splits referred to, it must be borne in mind, are not visible to the naked eye, except accidentally when the light is so refracted as to cause a dark shade; but they may often be seen with a strong glass, the use of which is strongly recommended to those who have sufficient courage to find, alas! how often, a weak place in that beautifully-finished gold stopping, which to the unaided vision seems so smooth.

Brook-street.

Tumours and Abscesses, Causes and Treatment.

By W. H. ATKINSON.

Read before the Brooklyn Dental Society, June 12, 1876.

Regular inflow of pabulum to the territories in which nutrition is effected lays the first step to healthy appropriation in the various degrees of fulfilment of the demand of the needy territories. Flow of currents of pabulum, retardation of flow, deflection of flow and confluence, of coinciding streams of energy and pabulum in equable movements constitute the morphological changes requisite to keep the machinery of nutrient function in good working order. Undue expression of flow, deflection of current or retardation of energy or pabulum, become arrest of nutrition at the point of expression or obstruction of these normal movements of morphological change. Thus arrest becomes obstruction, flow becomes flood and physiological metamorphosis becomes separatory action in place of combinatory procession of the elemental constituencies of tissues. And now we have a pathological instead of a physiological metamorphosis of energy and pabulum, resulting in simple exudate, tumour, tubercle, abscess or gangrene.

We are called upon to-night to make a "lay out" of the subject of "Tumours and Abscesses, causes and treatment," to serve as a target for the sharp intelligence of the members to shoot at.

Abs, from, and *cedo*, I go, give us the roots of our word abscess.

In works on pathology the contents of the abscess running from a rupture or opening, seem to be the underthought in the adoption and use of this word.

Without quarrelling with the use that has been made of the term, I wish to exorcise its darkness by a justification of the primal ordeal by a delineation of the facts of the history of typical abscess.

The contents of the simplest form of abscess is air, or gas. When this is mechanically produced in a healthy body, the abscess cures by diffusion and dispersion. When pathologically produced by dissociation of the gaseous elements of cells, they are torn asunder by the production of the gas and made to go from each other, being mechanically separated by the pressure of the gas or air.

In case a single intercellular space, or only a few spaces be involved, in a tolerably fair constitution, the abscess cures by spontaneous dispersion of the gas; but in weak constitutions where a considerable number of cells have their interspaces involved in the production of the gas, another step in the departure from normal function takes place, by exudation from adjoining capillary walls, or ruptured cell walls, which exudate, absorbs the gas, either by mechanical or chemical affinity. When the absorption is purely mechanical, resorption of the exudate, and dispersion of the gas is easily induced by active exercise or local manipulation, both of which accelerate the circulation, prevent further exudation and facilitate diffusion and resorption; but when the absorption of the gas is chemical, a sort of fermentative process deteriorates the contents of the abscess, by inciting dissociation of the elements of the extravasated pabulum.

The dissociation and new association of elements in the exudate, have many measures of activity in the degree of energy and the time consumed in the abscessing process. These range from the coldest and slowest to the hottest and most rapid development of the process of absorbing territories of extravasated fluid and corpuscular blood.

Where the molecular changes are slow and all the bonds

of affinity satisfied by saturation of equivalent bonds, we have the so-called white swellings, or cold abscesses, as examples of this form of retrograde molecular metamorphosis.

Where the changes are rapid, and some (many) bonds of energy are set free for lack of nearness of equivalent bonds, we have hot, acute abscesses formed of the so-called phlegmonous type, attended with constitutional disturbances.

The rootal sense of tumour involves the idea of swelling or enlargement. Simple enlargements of the normal tissues are called sarcomas. When a line of separation is set up between the normal and abnormal tissues by the formation of an adventitious membrane, which becomes the covering or sac, that holds the involved structure, we classify them then as encysted tumours, and when these have soft interiors, or fluctuating contents they present the example of an ideal abscess.

It will be perceived that all abscesses are tumours, but all tumours are not necessarily abscesses, according to the definition just given.

Whatever interferes with the normal nutrition of the tissues, which consists in an equable flow and reflow of pabulum and debris to and from the part, may be set down as a cause or antecedent condition, necessary to the formation of a tumour.

Excess of supply of pabulum is the simplest form by which tumours are produced, and is usually denominated hypertrophy. There are two forms of simple hypertrophy; the first is increase of cells in number, of normal size and function; the second is increase in size of normal cells, with corresponding increase of functional activity. Tumours thus produced are nearly always of a benign character, and are harmless, except where they, by their size, encroach upon the territory of important tissues, the function of which they mechanically disturb. The character and degree of the disturbance will give us the measure of the threatened danger.

Just at this point, it becomes us to be very careful in our observations and speculations upon the deflections of functions that constitute the degrees and lines of demarcation between benign and malign manifestations of function.

For my part I am fully convinced that all forms of malignant nutrient actions have their origin in a simple minus

expression of functional energy, therefore we may conclude that any departure from normal activity, if continued, may result ultimately in greater and greater deterioration, and finally, dissolution of the part, or the entire body.

As a rule, tumours formed of analogous tissues, may be regarded as non-malignant, while those formed of heterologous tissues must be looked upon as threatening and dangerous, and demanding early extirpation wherever possible.

A rational management and treatment will now suggest itself to all who understand what has already been stated.

As all growths depend upon the supply of pabulum, it is evident that the regulation of that supply by increase, diminution or arrestation, will constitute certainty of control and efficiency of management requisite to perfect success. The details of application of these principles, involve the dynamic, physical, psychical and social relations of the case, and will be successful in the ratio of the clearness of the understanding, and the persistency of him having the case in charge and the compatible coincidence of the patient.

Extirpation of morbid growths is effected in various ways. Two principal methods of extirpation present themselves; the first physiological, the second mechanical.

The physiological method consists in starvation, which may be effected rapidly or gradually. The mechanical extirpation is effected surgically, by ligature, knife and cautery.

Many tumours are self-extirpative by virtue of encroachment upon the channel of supply of pabulum so as to favour starvation.

Starvation has two modes of expression that may be denominated the wet and the dry modes. Dessication, shrivelling up and gradually wasting, as in warts, or shrinking and falling off bodily, as in pedunculated moles, are examples of cure by starvation.

Another mode of starvation is where the size of the tumour has so pressed upon the vessels of supply and departure, as to arrest the circulation in the tumour.

At this point of stasis of the circulation, a molecular change or fermentative process is set up by reason of the warmth favouring the retrograde metamorphosis that first coagulates, and then refluidifies the juices and soft solids of the interior of the tumour by an abscessing process that gradually bursts the tumour, discharging its contents, presenting an ulcerous chasm upon the site of the former morbid

growth which ultimately cicatrizes, thus ridding the patient of his malady without professional assistance, by the unaided efforts of nature.

Whenever we attempt to relieve a patient of a morbid growth, benign or malignant, the effort should be made to go beyond the line of demarcation between healthy and morbid tissue, at the risk of losing an unnecessary amount of healthy tissue, in preference to the probability of leaving any of the morbid growth.

In all cases where at all possible, the flaps of skin should be brought accurately together, by coaptation without tension, so as to secure union by first intention, with the least possible amount of scar tissue. Whenever we cannot secure enough skin to close the entire chasm, we should study the case well, so as to have the cicatrice come over the site of the least important tissues and organs, in order that the original function of the part may be as little influenced as possible by subsequent cicatricial contraction.

With these directions, and a scrupulous adherence to all that ministers to the hygienic conditions of the patient, the principal of which is physiological rest of the part involved in the operation, we may trust the issues of the case in the hands of any intelligent practitioner.—*Dental Register*.

Dental Therapeutics.

By W. E. DRISCOLL.

Read before the Indiana State Dental Association, June 28th, 1876.

It is hardly expected or desired that I recite to you theories and principles of dental therapeutics generally accepted as correct, and already on record in our professional libraries, and consequently accessible to all who desire to study and improve. I can serve you to better advantage by limiting my remarks to modes of practice that are still questioned by some considerable portion of the profession. I shall further limit myself to those debatable modes that I have thoroughly tested in my own practice, leaving you to decide for yourselves on which side of each question is to be found a preponderance of good authority. In fact, my highest hope in the preparation of this paper will be attained if it leads to a general examination of the subjects touched upon, either here or after your return home.

At our meeting in 1869, amid many expressions of doubt, the claim was made by some of our members that a considerable proportion of dental pulps could be permanently preserved alive with the new capping os-artificial.

The year following I made quite a number of efforts to save exposed pulps with this material as a capping, but failed, I think, in every attempt.

At the meeting in 1870 the claim of successful experience with this capping was repeated. Upon returning home I adopted the plan of sealing in an exposed pulp that I am about to describe. I had success from the first case. My memoranda of cases is not as full and specific as I wish it was, yet I have enough recorded to state positively that five per cent. will include every failure from every cause, and none of these, do I believe, were lost from any fault of the materials used or the mode of applying, but was due to the unfavourable condition of the health or habits of the patient.

Now as to the manner of capping the pulp. If it is freshly exposed or has been restored to a healthy condition, I touch the exposed point with full-strength carbolic acid; without wiping this away, I take just enough os-artificial, mixed as thin as I can manage it conveniently, to cover the exposed point thoroughly; I place the cement in the cavity, nearly touching the pulp; then with a small piece of bibulous paper introduced with a spoon-shaped excavator, I press the os-artificial gently into accurate contact with the exposed surface of the pulp and the adjacent dentine. The paper at the same time absorbs all the excess of chloride of zinc, supposed to be so deleterious to the pulp by some.

The frightful pain we hear so much about as resulting from the contact of oxy-chloride of zinc with the sensitive pulp is either much diminished by this manner of applying the paste, or else I have a remarkably tolerant class of patients, as they generally answer upon inquiry, that the pain is of no consequence. To this thin layer of the cement I add as much more as may be required, putting in very little at a time, and quickly absorbing the excess of chloride with paper, as I press it firmly into place, and instead of making it as thin as I can handle it, as the first portion applied, I now make it as thick as it can be used. In this way the os-artificial is made so hard that no delay is neces-

sary if it is desirable that the gold-filling should be put in at the same sitting. I am thus specific in details, because so many complain of failure and declare that os-artificial, especially, is unfit to be placed in direct contact with an exposed tooth pulp; and from what I have been able to learn from the dental journals, societies, and individuals, after a very general abandonment of os-artificial, the entire vegetable, animal, and mineral kingdoms have been searched for something better, but with no abatement in the cry of failure.

If I am correct in my view of the situation, and find from actual experience, that so soon as the pulp is brought to a condition fit to be sealed up at all, that the plan here described is all that can be desired, I think it is time the wanderers were being called back to something better than they claim to have found in all their search beyond.

The foregoing is applicable after the pulp has been brought to a condition that will admit of capping. To illustrate how I generally proceed with an inflamed or suppurating pulp, I will give my treatment of a case which I consider a most thorough test, so far as one case can be, of its utility.

August, 1875, Miss S. called with pulps exposed in posterior proximal surfaces of the inferior bicuspid of each side. The adjoining surfaces of the molars were in like condition, making four pulps exposed, facing each other in pairs. Three of the cavities extended under the gum; one pulp alone, in a bicuspid was freshly exposed, the other three were suppurating or had morbid growths extending outside of the pulp chamber, that bled freely when pierced with an excavator. The pain had become unendurable, hence her visit to the office. This will be recognised as a discouraging case. I told the patient she had delayed treatment too long, and that I did not desire to undertake the case. She begged that I would try to save them, promising perfect obedience to my directions while under treatment.

Being in lower teeth, I, as is my general choice, preferred saving the pulps alive, to devitalising, and filling roots; that is, I consider it easier to save pulps alive than to devitalise, remove them, and fill the roots. But this of course should not influence one to adopt a plan of treatment if not best for the patient; here, however, duty and convenience

go together. I depleted and cut off the the fungus growths that extended out of the pulp chambers, and with a sharp Scranton drill, much larger than the opening to the pulp cavity, I trimmed, smoothed, and enlarged this opening, thus relieving pressure upon the swollen pulps and giving more space for the application of the anodynes, etc. In this case I applied dental pain obtunder for a few minutes to allay pain; after this was done, I touched the exposed points with carbolic acid, made a paste of phosphate of lime and lactic acid, and filled each cavity about half full with the paste in contact with the pulp, and sealed up with sandarach varnish and cotton. Dismissed her for three days, if the pain did not require an earlier return. She appeared on the third day, reporting no pain except about one hour the first night. Pulps bled very slightly upon puncturing them a little to ascertain their condition. Applied carbolic acid and sealed up as before with a fresh mixture of lacto-phosphate of lime in contact with the pulps, and waited four days. No pain this time; pulps assuming the healthy pink colour indicating normal circulation and absence of inflammation. I now capped them with os-artificial, in the manner already described in this paper, and one week following filled them permanently. Have had opportunity to examine these teeth several times since treating and filling. There is no tenderness or sensitiveness to thermal changes distinguishing them from those adjoining that have never been diseased. The impediments to a successful result in this case were the long time the pulps had been exposed, the irritable condition of her nervous system from the protracted pain, the extension of the decay under the gums, and the distance, sixteen miles, to be travelled at each sitting. The advantages were youth and vigorous general health, sanguine temperament, regular habits, and absolute obedience to my directions while treating.

The result is no more than a fair illustration of my experience where I have been able to control the patient as to prompt attendance and the avoidance of undue exposure to cold, &c., while treating.

I have always treated these and similar cases presented, as I could get to, not always as I would choose to do if I could control them as would be desirable. For this reason I sometimes devitalise comparatively healthy pulps with arsenious

acid. I confess that only a very short time ago I would have hesitated before making this statement before a State Dental Association, but not so now. Necessity compelled me to act contrary to the teachings of those whom I am usually content to follow, with few or no questions, until experience proves they are mistaken. Thence, after hearing arsenic denounced unreservedly and unanimously every year since joining this Association, I do not hesitate to speak the first word in its favour that has been uttered, to my knowledge, in the Association since its organisation; and although I would, and do preserve every pulp in which the condition and habits of the patient gives the least promise of success. But when I know a patient will not second my efforts, I do not propose to treat his case for weeks or months, to fail at last from his negligence, when arsenic and two sittings will give the result that would be reached at last through no fault of mine; and yet I may suffer the loss of his confidence because of the failure to attain my first purpose.

I go still further; if the pulp is to die at all it is better that this end is reached through the effects of arsenic than from any other cause known to dental pathology or therapeutics. And why? Because in a large proportion of cases in all the teeth, but in molars especially, with the best instruments ever invented, you cannot always be certain that you remove all the decomposing pulp, and if it has died from inflammation, and any considerable portion of it is left in the canals, trouble may be generally expected. If, however, before death it has been subject to the catalytic action of arsenic, it is very seldom that any trouble will result from any portion that must be left in canals too small or tortuous for removing the devitalised portion remaining therein. The arsenic destroys the morbid agencies in the blood of the thread-like remains of the pulp, and conditions or materials for putrefaction, I believe, are as absent as if they had never existed in the canals. It has been the generally accepted theory that arsenic will produce periostitis if not speedily removed after being used to destroy the vitality of the dental pulp. I deny this. It is the closure of the pulp-cavity confining the gases that form in this condition of the pulp that produces the irritation resulting in periostitis, not the action of arsenic at all. To prove this: twenty-four or forty-eight hours after the first application of arsenic

open the pulp cavity and allow the escape of the pent-up gases, put in more arsenic or not, as you think will be the better test, seal up carefully, as at first, and you will find no trouble or periostitis about that tooth as long as the stopping is intact. Of course, if periostitis has been established, even in a moderate degree, before the first application of arsenic, that will not stop the inflammation, and some will charge it to the arsenic. Some may feel shocked to hear such statements as this, and will fear the flood-gates of empiricism are being lifted from their hinges. I will say, however, that we have had just enough dogmatism in our profession, as in all others, to frighten off those who doubt certain notions of principles and practice.

As to preserving the vitality of a portion of a tooth pulp, after a considerable portion has been lost from any cause, my experience gives no encouragement that the efforts in that direction can be made so generally successful as to be worth our time and trouble. Three or four years ago much was said and promised of saccharated pepsin for this purpose. After about one year experimenting with it, I did not succeed in digesting away the devitalised portion of a single pulp, so far as I could discover. So little has been said about it of late that I suspect others were as badly disappointed as myself. Still, if there is any one present who is in the habit of preserving the vitality of a small portion of the pulp, I shall be glad to hear from him.

On the subject of alveolar abscess I shall have very little to say. The last few years have brought very decided advances in treatment of these cases, and so much has been put upon record in reference thereto, that I hope very few have been so unworthy their profession as to remain in ignorance of the successful management of nearly all cases where the co-operation of the patient can be secured during the term of treatment. The old fancy about a "pus secreting sac" I suppose is about abandoned by the studious and thoughtful portion of the profession. A mere reference to this "time-honoured" myth reminds us how much of our early education must be unlearned as time brings its never-ending train of relations.

"True" alveolar abscess, except in cases of extreme scrofulous or syphilitic diathesis, will subside with little or no treatment upon the removal of the cause, and that is a foul vacuum in the roots of the teeth, for which nature seems

to have rather more than her traditional horror, but against which it has no means of defence short of the destruction and obliteration of the tooth. Fill this vacuum accurately and innocuously, and the abscess will cease to exist for want of an exciting cause. Cure can be hastened by the use of antiseptic, escharotic, and stimulant injections.

In filling such roots, I first remove all decomposing matter with a hooked-pointed nerve-instrument, with drawn temper, formed like No. 2 of Dr. Arrington's set. By patient and careful probing I ascertain the length of the canal, and mark this upon the filler to guide me in locating the first instalment of filling at the apex of the root. Disinfect with carbolic acid, and with one of the instruments just mentioned, with hook off and the point flattened, and a very slight wrapping of cotton, carry and inject to the apex os-artificial, mixed quite thin, and before it begins to set, I detach the cotton and pack it upon the os-artificial that has gone before; then proceed in the same way to fill the remainder of the canal. Should this alone prove insufficient to stop the discharge, or if I wish to expedite a cure, I make an opening with a lancet and a Scranton drill, about No. 15 of White's burr gauge, to the point of the root, and insert a tent of cotton, charged with carbolic acid. With this plan of treatment I am so nearly uniformly successful that I feel no need of a better way.

In the treatment of what has been denominated "false alveolar abscess," that which forms below the apex of the roots and discharges at the necks of the teeth, for the recession of the gums produced by lime deposit, I also have a favourite, or what I consider a best way, of proceeding. It is to remove with instruments the deposit upon the necks and roots of the teeth as thoroughly as possible; with a pleget of cotton and a suitable instrument I carry to every affected part aromatic sulphuric acid. A very few repetitions of this remedy, from three days to a week apart, will generally clear the way for nature to repair the damage, except in aged patients or those of anæmic habits, or other constitutional weakness, and then we can have those much coveted consultations with the general practitioner of medicine. Careful, gentle, and thorough brushing of the lower gums upward, and of the upper ones downward, must be earnestly enjoined.

For antiseptic, narcotic, stimulant and escharotic purposes

it will be noticed that I have given preference to carbolic acid over the many other agents in common use for these purposes. Between it and creosote, I have never been able to note a clearly defined difference in results that some claim to have observed. Glycerole of thymol and salicylic acid I have not found so generally applicable or reliable, but use them occasionally interchangeably with carbolic acid where a number of applications are required.

It is very seldom I suppose that dentists are consulted in the most serious pathological condition of the human teeth that is experienced so generally in first dentition. Notwithstanding this fact, I hope to do some good in calling your attention to, in my mind, a most important practice in treating this often fatal disease of childhood. You may use it in your own families if not called to treat, or have no means of extending the treatment to others. It is lancing the gum over the erupting teeth in the order in which they should make their appearance. My observation is that physicians are very lax or sparing in the use of the lancet in treating these cases. They are so unfamiliar with the order of the eruption of the teeth, that often times the child is in the agony of death before the tumefaction of the surface shows them where to operate; and there has been so much said against the practice, so much about the danger from hæmorrhage, that when a simple incision in the right spot would save a life, they neglect the only possible remedy. I speak positively. Watch your child until the palor of death has begun to settle upon it, under exclusive drug treatment, then see it quickly relieved and reviving by the use of the lancet, and you will be positive in your feelings and expressions on the subject ever afterward. Lancing early and often as a good dentist would know when, where and how to do it is as near a specific as can be found in the entire field of therapeutics. It is based upon the principle of removing the cause, a principle you will notice I have endeavoured to keep in view in each division of this paper. After thus removing the cause of the disturbance much more may be done that would be well nigh useless if not preceded by the lancet.

Like other points touched upon in this paper, this very brief reference to lancing the gums of teething children must suffice. Those desiring to study the matter further, I would refer to Prof. Flagg's papers in the *Dental Cosmos*, as among the most worthy of their attention. Then as the next step I

would suggest that the regulars be stirred up to a sense of their delinquency in a practice that would save many precious lives they now allow to be lost.—*Dental Register*.

Dental Legislation.

In the earlier days of American dentistry, although there existed even a greater necessity for some barrier to the promiscuous entrance into the profession of unqualified persons than is now felt, there were insuperable objections, in the minds of even reputable and competent practitioners, to any application for legal protection. Chief among these stood that almost universally predominant feeling of professional jealousy which was so long the barrier to advancement in dentistry in almost every direction. To appeal to public guardianship was to display their modes of practice, not alone to the public and unprofessional eye, but to the scrutiny of, and, perchance, adoption by, the professional brotherhood. Narrow and illiberal as such a view will now appear, it is no less the exact one taken by the general practitioner of fifty years ago, on almost any question connected with his practice. Good dentists were few and isolated, and easily commanded upon their merits all the practice they could care for; and they consequently contented themselves with railing at such dental operators as were, or as they conceived to be, below them in scientific or practical status, being well aware that they were secure in the position they had gained in the public estimation, and caring little for aught else. It will be remembered that we refer to the general practitioner, and do not include some, who, from the earliest dates, appear to have been entirely free from such ignoble motives.

There was another fact which also operated strongly against any movement of the better class of dentists toward legislative protection against empiricism. This was, that the majority of persons practising dentistry in this country, was, in those times, composed of the very class against which any such enactment would, perforce, have been aimed. This class, although certainly not influential in individuality, was yet so as a whole, and could not be ignored—and might, possibly, not have been overcome—in any contest such as would surely have arisen on the question of dental legislation.

Upon the establishment of dental periodicals and schools, and in consequence of the growth of liberal ideas in the profession, the state of affairs in dentistry gradually changed. A college degree and an official published organ gave to the educated dentist of 1840 and afterward a superiority in the public estimation over the irregular practitioner which he had never before held, and enabled him to concert and complete measures such as would have been exceedingly difficult, if not impossible, to have been carried out, even five years before.

Curiously enough, the first State to pass a dental enactment in this country was Alabama, almost the poorest in skilled dentists at the time of any State in the Union. This legislation (probably the first ever had on the dental specialty) was somewhat anomalous, placing the keeping of dental interests entirely in the hands of the general surgeon and physician. The old and now well-known objections to such a course operated then much more actively than they do at present. Said Dr. Harris,*—"The insuperable objection to committing the interests of dental surgery into the keeping of the general surgeon and physician is, that gentlemen who are only medically educated, as far as it regards dental surgery, are oftentimes as ignorant as the most unlearned. The medical colleges have never taught this branch of surgery in its most important and difficult operations, and hundreds of students are graduated yearly who do not really know how to extract a tooth scientifically." It is worthy of note that Dr. Harris, in conclusion of the above remarks, outlined almost exactly the present system of associated dentistry more than thirty years ago. He adds, referring to the Alabama law,—“Much may be done, even in this way, but the true remedy lies in the general union of educated dentists in a central association, aided and sustained by State societies. Such, acting with as much power from the State laws as surgeons and physicians have, will be able to make the profession honourable, respectable, and useful.”

The Act of Alabama was approved December 31st, 1841. It was as follows :—

* “American Journal of Dental Science,” 1st Series, vol. iii. p. 291.

ALABAMA.

"An Act Regulating the Practice of Dental Surgery, and for other purposes.

"Section 1. Be it enacted by the Senate and House of Representatives of the State of Alabama, in General Assembly convened, That from and after the first Monday in December next, it shall be the duty of each of the medical boards of this State to examine and license applicants to practise dental surgery, under the same rules and regulations, and subject to the same restrictions as those who apply for licence to practise medicine; and, in order more fully to carry this Act into effect, it shall be the duty of each of the medical boards, where the same is practicable, to add to their body, by election, a professional dentist, having the requisite qualifications, which dentist so added shall constitute a part of the board.

"Section 2. And be it further enacted, That if any person styling himself as dentist, or other person, shall engage in the practice of dental surgery as a professional business, after the aforesaid first Monday in December next, without having been regularly licensed so to do by one of the medical boards of this State, as hereinbefore provided for, for every such offence shall forfeit and pay a sum not exceeding fifty dollars, recoverable before any Court having jurisdiction of the same, one-half to the informer, the other half to the county where suit is brought.

"Section 3. And be it further enacted, that all bonds, notes, or promissory obligations, or assumpsits, made to any person or persons not authorised as provided for in this Act, the consideration of which shall be for services rendered as a professional dentist, or in the line of professional dentistry, shall be utterly void and of no effect; *Provided*, the provisions of this Act shall not be so construed as to prevent persons from practising dental surgery who have a licence to practise surgery and medicine, from either of the medical boards of this State, or diploma from any regularly-constituted institution in the United States.

"Section 4. And be it further enacted, That hereafter it shall be the duty of all practising physicians, surgeons, and dentists, to have their licences recorded in the office of the Clerk of the County Court in which they may reside, and

the certificate of the clerk shall be considered as good evidence in any Court of the right of any individual having a diploma or licence to practise his profession, and recover his debts for the same.

“*Section 5.* And be it further enacted, That all laws, and parts of laws, contravening the provisions of this Act, be and the same are hereby repealed.”

What success the above enactment met with during the long time it was in force (it is believed, to the opening of the late civil war), cannot now be ascertained. Its effects were, probably, more in the suppression of irregular practitioners than in the elevation of the standard of professional acquirements in dentistry. The latter, in fact, has proved an exceedingly difficult operation, through legislative action, in later days, and with the most approved form of law; and great success in this direction cannot be expected of so crude a statute, and in times such as were those in which it was passed.

The newer order of thought and ethics introduced by and with journalism and educational institutions was itself so powerful an educator, both of the profession and the public, that any necessity for legal status appears to have been small, or at least lightly felt, for many years.

Dentistry, after 1840, had acquired such importance and generally accorded scientific standing as it had never before known. The graduates of dental colleges multiplied, and the class of good—or, at least, tolerable—dentists became almost as nearly the rule as it had formerly been the exception. Under these circumstances dentistry rested for a period of about twenty-five years.

About 1865 there arose a series of circumstances certainly not contemplated by those who have been affectionately denominated “the fathers of American dentistry.” This subject is designed to be more fully treated in the chapter on “Dental Education,” and will not, therefore, be further alluded to here. Suffice it to say that satisfactory *self-government* in dentistry appeared to have, at that time, fulfilled its possibilities; and the profession cast about for some method which should replace it to a better end. This appears to have been partially effected, at least, by resort to the original method, put in operation by Alabama twenty-five years before.

Several of the States, notably Kentucky, Pennsylvania, and New York, attempted to procure legislative action on dentistry, about 1860-68. Kentucky failed entirely; and her State Society is now organised under a special Act of incorporation.* Pennsylvania has finally succeeded, after much labour and several rebuffs. New York was the first after Alabama to procure a special legislative enactment relative to dentistry.

NEW YORK.

So far have been developed two classes of such laws. The Act first in force in Alabama, and those of Ohio, New Jersey, Georgia, and Pennsylvania may be denominated "prohibitory" laws; that is, they seek, by stringent provisions, under heavy penalties, to forcefully prevent the practice of dentistry by any except regularly authorised persons. That of New York forms a class by itself, its object being, in the language of its founders, to "seek thorough organisation and the establishment of proper standards, . . . without the enactment of penalties for the infringement of the State Society's regulations,—a law which seeks rather to mould public opinion than to repress the unqualified.—which endeavours to elevate the incompetent, rather than to drive him from practice."†

The multiplication of dental societies in this State proved to be the first indication of the need for organised professional effort there. An entire want of unanimity of opinion or organised action on any matter of importance, was felt to be a great obstacle to professional advancement; and the absence of any standard of qualification for admission to the brotherhood was recognised as a serious evil, which demanded prompt remedy. It was said, and justly,—“Law, Medicine, and Divinity have each their barriers erected; having passed which, the student becomes at once the professional brother, but outside which he is, in no case, recognised or given the hand of fellowship. But Dentistry

* In 1867 certain prominent dentists of that State undertook the passage of an Act, which provided, among other things, that it should be unlawful for any but holders of diplomas of dental colleges, or certificates of an examining board, to practise dentistry; and instituting fines for the breaking of the proposed law, making the single exception to the above that the Act should not “prevent physicians and surgeons from extracting teeth.” See “Dental Cosmos,” vol. viii. p. 604.

† Manuscript of Dr. Barrett in the possession of the author.

has no line of demarcation by which to separate the competent from the incompetent,—no standard of qualifications,—and no clearly defined limits. . . . Law, Medicine, and Divinity, themselves in possession of the immunities of centuries, are distrustful of the profession which has no organised existence and no responsible head. Any man may, at his option, become a dentist. There is no obstruction to prevent the ingress of the unworthy, and no code of ethics such as will prevent fraternisation with them.”*

Such points of moment as these could not fail to engage the serious consideration of the best men. The various local societies began to give expression to their ideas of reform by the appointment of committees to agitate the subject of a deliverance from the evils which beset them. The Buffalo Dental Society finally took the step of calling a general convention of State practitioners; and the result was the passage of the following Act in the Legislature, which was signed by the Governor, April 7th, 1868:—

“An Act to incorporate Dental Societies for the purpose of Improving and Regulating the Practice of Dentistry in this State.

“The People of the State of New York, represented in Senate and Assembly, do enact as follows:—

“*Section 1.* It shall be lawful for the dentists in the several judicial districts of the supreme Court of this State, to meet together at the following named places, to wit: In district number one, at the Cooper Institute in the city of New York; district number two, at the City Hall in the city of Brooklyn; district number three, at the Delavan House in the city of Albany; district number four, at the Clarendon Hotel, Saratoga Springs; district number five, at the Stanwix Hall Hotel, in the village of Rome; district number six, at the Lewis House, in the village of Binghamton; district number seven, at the Canandaigua Hotel, in the village of Canandaigua; district number eight, at the Medical Hall, in the city of Buffalo; on the first Tuesday of June, eighteen hundred and sixty-eight, at two o’clock in the afternoon of that day, and such dentists so convened as aforesaid, or any part of them, not less than fifteen in number, shall proceed to the choice of a president, vice-

* MSS. of Dr. Barrett.

president, secretary, and treasurer, who shall hold their offices for one year, and until others shall be chosen in their places; and whenever said societies shall be organised as aforesaid, they are hereby constituted bodies corporate, in fact and under the names of the 'District Dental Society' of the respective judicial districts where they shall be located; provided always, that if the dentists residing in any district shall not meet and organise themselves as aforesaid, it shall be lawful for them, at the call of fifteen dentists residing in such district, to meet at such other time and place as they shall designate; and their proceedings shall be as valid as if such meeting had been at the time before specified.

"*Section 2.* Each of said district societies when organised as aforesaid, shall elect eight delegates, who shall meet at the Capitol, in the city of Albany, on the last Tuesday of June, eighteen hundred and sixty-eight, and proceed to organise a State dental society, which shall be named 'The Dental Society of the State of New York,' and, being met, not less than thirty-three in number, shall proceed to elect, and shall thereafter annually elect a president, vice-president, secretary, and treasurer, who shall hold their offices for one year, and until others shall be chosen in their places; and said Society shall be a body corporate, under the name and style as aforesaid.

"*Section 3.* The secretaries of each of the district societies shall lodge, in the county clerk's office of some county within their district, a copy of all the proceedings and records of their organisation; and it shall also be the duty of the secretary of the State Dental Society, in like manner, to lodge, in the office of the Secretary of State, a copy of its records and proceedings had at the organisation thereof; and the said county clerks, respectively, and the Secretary of State shall file the same in their respective offices, and shall receive therefor a fee of —.

"*Section 4.* At the first meeting of said State Dental Society, the same being duly organised as aforesaid, the delegation from each district society shall be divided into four classes of two delegates each, who shall serve one, two, three, and four years respectively, and until others shall be elected in their places, and the said district societies, at each annual meeting thereafter, shall choose two delegates to the State

Society, to serve each four years, and fill all vacancies in their respective delegations that may have occurred by death or otherwise.

"Section 5. Each of the incorporated dental colleges of this State may annually elect two delegates to the State Dental Society, who shall be entitled to all the privileges, and subject to the same rules and regulations as other delegates.

"Section 6. The said State Dental Society may elect permanent members of said Society from among eminent dentists residing in this State, but not to exceed twenty in number, at its first meeting, nor more than five in any one year thereafter, which members so elected shall be entitled to all the privileges of delegate members, but shall receive no compensation for their attendance on meetings of the State Society, except when sent as delegates by the district societies or colleges aforesaid. And the said State Society may elect honorary members from any State or country; but no person shall be elected an honorary member who is eligible to regular membership, nor shall any honorary member be entitled to vote or hold any office in said Society.

"Section 7. The several district societies established as aforesaid, at their annual meetings, shall appoint not less than three nor more than five censors, to continue in office for one year, and until others are chosen, who shall constitute a district board of censors, whose duty it shall be carefully and impartially to inquire into the qualifications of all persons who shall present themselves within the districts where they reside, for examination, and report their opinion, in writing, to the president of said district society, who shall thereupon issue, on the recommendation of said board of censors, a certificate of qualification to such person or persons, countersigned by the secretary, and bearing the seal of the said district society.

"Section 8. The State Dental Society organised as aforesaid, at its first meeting, shall appoint eight censors, one from each of the said district societies, who shall constitute a State board of censors, and at the first meeting of said board the members shall be divided into four classes, to serve one, two, three, and four years respectively, and said State Dental Society shall, at each annual meeting there-

after, appoint two censors, to serve each four years and until their successors shall be chosen, and fill all vacancies that may have occurred in the board by death or otherwise. Each district society shall be entitled to one and only one member of said board of censors. Said board of censors shall meet at least once in each year, at such time and place as they shall designate; and being thus met, they, or a majority of them, shall carefully and impartially examine all persons who are entitled to examination under the provisions of this Act, and who shall present themselves for that purpose, and report their opinion in writing to the president of said State Dental Society, and on the recommendation of said board it shall be the duty of the president, aforesaid, to issue a diploma to such person or persons, countersigned by the secretary, and bearing the seal of said Society.

“Section 9. All dentists in regular practice at the time of the passage of this Act, and all persons who shall have received a diploma from any dental college in this State, and all students who shall have studied and practised dental surgery with some accredited dentist or dentists for the term of four years, shall be entitled to an examination by said board of censors. Deductions from such term of four years shall be made in either of the following cases:—

“1. If the student, after the age of sixteen, shall have pursued any of the studies usual in the colleges of this State, the period, not exceeding one year, during which he shall have pursued such studies, shall be deducted.

“2. If the student, after the age of sixteen, shall have attended a complete course of lectures of any incorporated dental or medical college in this State, or elsewhere, one year shall be deducted.

“Section 10. Every person on receiving a diploma from the State Dental Society shall pay into the treasury thereof the sum of twenty dollars, and on receiving a certificate of qualification from the dental society of any district the sum of ten dollars into the treasury thereof.

“Section 11. The dental societies of the respective districts, and the Dental Society of the State, may purchase and hold such real and personal estate as the purposes of their respective corporations may require. The district societies each not exceeding in value the sum of five thou-

sand dollars, and the State Dental Society not exceeding twenty thousand dollars in value.

“*Section 12.* The respective societies herein provided for may make all needful bye-laws, rules, and regulations, not inconsistent with any existing law, for the management of the affairs and property of said societies respectively, and providing for the admission and expulsion of members, provided that such bye-laws, rules, and regulations of the respective district societies shall not be repugnant to nor inconsistent with the bye-laws, rules, and regulations of the State Dental Society.

“*Section 13.* All dentists who shall have been in regular practice in this State at the time of the passage of this Act, and all persons who shall have received a certificate of qualification from any district society, shall be eligible to membership in said district societies.

“*Section 14.* The Dental Society of the State of New York shall be entitled to all the privileges and immunities granted to the Medical Societies of this State.

“*Section 15.* This Act shall take effect immediately.”

In this enactment the State Society (convened and organised according to the law) perceived an omission,—authorisation to confer a degree with the diploma. This was conceived to be necessary, in order to put non-graduates of colleges on an equal footing with graduates. Accordingly, at the next meeting of the Legislature, in 1869, was presented and passed the following amendment to the original law :—

“*An Act to amend an Act entitled ‘An Act to Incorporate Dental Societies, for the purpose of Improving and Regulating the Practice of Dentistry in this State.’*”

“The people of the State of New York, represented in Senate and Assembly, do enact as follows :—

“*Section 1.* Section eight of the Act entitled ‘An Act to Incorporate Dental Societies, for the purpose of improving and regulating the practice of Dentistry in this State,’ is hereby amended so as to read as follows :—

“‘*Section 8.* The State Dental Society, organised as aforesaid, at its first meeting shall appoint eight censors, one from

each of the said district societies, who shall constitute a State board of censors, and at the first meeting of the said board the members shall be divided into four classes, to serve one, two, three, and four years respectively; and said State Dental Society shall, at each annual meeting thereafter, appoint two censors, to serve each four years, and until their successors shall be chosen, and fill all vacancies that may have occurred in the board by death or otherwise. Each district society shall be entitled to one, and only one, member of said board of censors. Said board of censors shall meet at least once in each year, at such time and place as they shall designate; and being thus met, they, or a majority of them, shall carefully and impartially examine all persons who are entitled to examination under provisions of this Act, and who shall present themselves for this purpose, and report their opinion in writing to the president of said State Dental Society, and on the recommendation of the said board it shall be the duty of the president aforesaid to issue a diploma to such person or persons, countersigned by the secretary and bearing the seal of said society, conferring upon him the degree of 'Master of Dental Surgery' (M.D.S.); and it shall not be lawful for any other society, college, or corporation to grant to any person the said degree of 'Master of Dental Surgery.'"

"*Section 2.* Any person who shall knowingly or falsely claim or pretend to have or hold a certificate of licence, diploma, or degree, granted by any society organised under and pursuant to the provisions of this Act, or who shall falsely and with intent to deceive the public, claim or pretend to be a graduate from any incorporated dental college, not being such graduate, shall be deemed guilty of a misdemeanour.

"*Section 3.* This Act shall take effect immediately."

Under this law were formed one main and eight district societies, as required by it, and as noted in the chapter on "Dental Associations." The degree (M.D.S.) has been generally carefully conferred, and many dentists, in former practice without any degree, have availed themselves of the provisions of the Act in this direction. Another valuable feature exists in section fourteen of the Act. Under this section the State publishes, annually and gratuitously, at

least 800 copies of the transactions of the main society. Since 1869 these volumes have been issued in their order, at no cost to the profession. The Act thus offers facilities for dental publication unequalled by any other yet in force.

OHIO.

Following in the steps of New York, this State was the third to pass legislative enactments relative to dentistry. Further than immediate succession in point of time, however, the law of Ohio does not resemble that of the former State; for it is, perhaps, the most rigorously enforced of any of the class of prohibitory Acts. The following is the text of the original Act:—

“ A Law to Regulate the Practice of Dentistry in the State of Ohio.

“ Section 1. Be it enacted by the General Assembly of the State of Ohio, That it shall be unlawful for any person to practise dentistry in the State of Ohio for compensation, unless such person has received a diploma from the Faculty of a Dental College duly incorporated under the laws of this or any other State of the United States or foreign country, or a certificate of qualification issued by the State Dental Society, or by any local society auxiliary thereto; provided that nothing in this section shall apply to persons now engaged in the practice of dentistry in this State before the first day of January, 1873.

“ Section 2. Any person who shall practise dentistry without having complied with the regulations of this Act, shall be deemed guilty of a misdemeanor, and upon conviction thereof shall be fined not less than fifty or more than two hundred dollars; provided that nothing in this Act shall be construed to prevent physicians and surgeons from extracting teeth.

“ Section 3. All prosecutions under this Act shall be by indictment before the Court of Common Pleas in the county where the offence was committed, and all fines imposed and collected under the provisions of this Act shall be paid into the treasury of the county where such conviction shall take place, for the use of the common schools within such county.

"*Section 4.* This Act shall take effect and be in force from and after its passage."

The above Act was passed May 8th, 1868 ; but was afterward amended as follows :—

"*An Act to amend Section One of an Act, entitled 'An Act to Regulate the Practice of Dentistry in the State of Ohio,' passed May 8th, 1868.*

"*Section 1.* Be it enacted by the General Assembly of the State of Ohio, That Section One (1), of the above-named Act, be so amended as to read as follows :—That it shall be unlawful for any person to practise dentistry in the State of Ohio for compensation, unless such person has received a diploma from the Faculty of a Dental College duly incorporated under the laws of this or any other State of the United States, or foreign country, or a certificate of qualification issued by the State Dental Society ; provided, that in all cases where any person has been continuously engaged in the practice of dentistry for a period of five years or more, such person shall be considered to have complied with the provisions of this Act, and the Act to which this is amendatory.

"*Section 2.* Any person who shall practise dentistry without having complied with the regulations of this Act shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be fined not less than fifty dollars, nor more than two hundred dollars ; provided, that nothing in this Act shall be construed to prevent physicians and surgeons from extracting teeth.

"*Section 3.* All prosecutions under this Act shall be by indictment before the Court of Common Pleas in the county where the offence was committed, and all fines imposed and collected under the provisions of this Act shall be paid into the treasury of the county where such conviction shall take place, for the use of the common schools within such county.

"*Section 4.* That said original Section One (1) be and is hereby repealed.

"*Section 5.* This Act shall take effect and be in force from and after its passage.

" Passed March 10th, 1873."

(To be continued.)

Semi-Annual Meeting of the Conn. Valley Dental Society for 1876.

EXPOSED PULPS.

Dr. Noble considers the exposure of pulps in deciduous teeth as among the most perplexing cases that come into his hands, and often feels uncertain as to what course to pursue.

Dr. Searle : When I come across an exposed pulp in a deciduous tooth, I extract the tooth first, last and all the time.

Dr. Riggs : This class of cases is often, indeed, very perplexing, but I do not remove the teeth. My method is to destroy the pulp, if exposed, and fill. Use creosote and arsenious acid in very minute quantities, for the purpose of destroying the pulp. Consider it very important to save the deciduous teeth in order to prevent irregularities in the permanent set.

Dr. Jones : My method is similar to that employed by Dr. Riggs, with this exception : I make an artificial opening into the pulp cavity at the neck of the tooth, after filling, for the free discharge of pus, in order to avoid periosteal inflammation.

Dr. Riggs : I remove the pulp after devitalising, and fill the root cavity when practicable, but often find the foramen so large that it is nearly impossible to do so.

Dr. Shepard abhors the practice of extracting deciduous teeth in every case when the pulp is exposed. He does not treat such cases as in adult teeth. As a rule he has not had any success in attempting to save the pulp alive ; generally destroys the pulp. If the tooth is an incisor he does nothing but attempt to quiet the pain ; but in all other cases he tries to retain them as long as possible, in order to prevent irregularities. Cited cases of irregularities resulting from the premature extraction of the deciduous teeth.

Before the six-year molars are erupted he considers the retention of the deciduous molars of very great importance. After the six-year molars are erupted he considers the retention of the deciduous molars of less importance. He devitalises the pulp in various ways. It can frequently be removed with but little pain. Sometimes uses a little arsenic, allowing it to remain but a few hours without examination, repeating the application if necessary. Considers creosote, used in connection with arsenic, of value only as a vehicle.

Dr. Riggs frequently uses pulverised charcoal and arsenic in equal quantities. Simply saturates the pellets of cotton with pure *wood creosote*, so that it will take up a very small quantity of arsenic. The creosote serves to hold the nerve in painless quietness, while the arsenic "*puts in the big licks.*"

His object in using the charcoal with the arsenious acid is, that he may thus be enabled to more accurately determine the precise amount taken up on the cotton and applied to the pulp.

Dr. Garretson : In the treatment of exposed pulps in the first teeth, Dr. Garretson remarked that it did not seem to him possible to lay down any rule which could contain much of the virtue of reliability. Each case possessed its own character, and he who was to find himself able to best serve the patient, was he who found himself able to best read the circle of the subject. Did not find himself able to agree either with those who advise the extraction of aching deciduous teeth, or those who say they are to be extracted.

Circumstances alter cases oftentimes so materially that one is glad enough to extract, that greater evil may be avoided ; assuredly it is to be esteemed the case that the premature removal of these teeth interferes more or less with a harmony which should characterise the coming in of the second set.

Without entering into a discussion of the subject from such a standpoint, which Dr. G. thought neither necessary nor desirable under the circumstances of the meeting, he offered his own manner of treatment. Assuming irritation to be the cause of the pain in every instance, the search was to be after that which irritated. Most commonly this would be found in the presence of a foreign particle, a crumb, perhaps, bitten into the tender organ in the act of mastication. To remove a particle of this or any other nature when bearing upon a tender tooth-pulp would certainly be the directions which a man would receive from his common sense. It is not always the case, however, that in the removal of the offending agent the pain is found to be removed with it ; the reason for this is, of course, that an inflammation has been developed. We have then a pulpitis to treat. To abort or resolve such a congestive condition there are few, if any, means more reliable than a combination of lead-water with laudanum. A very satisfactory formula is as follows :—

	Plumbi Acetatis, gr. v.
	Tincture Opii, gtt. xx.
Mix.	Aquæ, one ounce.

To apply it nothing more is necessary than to saturate a pellet of cotton and lay it delicately within or about the cavity of the aching tooth.

Not unfrequently it is found the case that the teeth of children ache because of the presence of much acid in the mouth; the acid irritates the exposed pulps. In these cases the cause is easily enough discovered by means of a piece of litmus paper, and is as easily removed by washes of an antacid nature. Chalk and water, for example, or ammoniated water, or lime-water. When a reverse condition exists, the saliva being stringy, acids, both internally and locally, is the indication. Lemonade is perhaps as good as anything else. In the many cases in which an explanatory cause is not very evident it is well to prescribe a powerful sedative. Amongst the best of such order of medicaments is the sulphate of atropia :—

Atropiæ Sulphatis, gr. i.

Mix.

Aquæ Destillatæ, oz. i.

To be applied with care, as it is a very poisonous agent. It is safely used by saturating with it a piece of cotton corresponding with the cavity in which it is to be used.

A good general rule is to precede all such applications by washing out the cavity of the aching tooth, using warm water.

In those cases in which pulpitis results in periodontitis, and this in its turn engenders chronic congestions of the associate parts, it would seem to be the least of the evils to extract the tooth.

Letters to a Young Dentist.

ON EXTRACTING SOUND TEETH.

MY YOUNG FRIEND,—Whether an operator is justified in extracting sound permanent teeth in the mouths of the young, when there appears to be a crowded condition of the dental organs, is a question that has been asked many times, and received as many opposite answers. Like other propositions that are susceptible of argument *pro* and *con*, all of which seem plausible, perhaps it never will be definitely settled to the satisfaction of the majority of dentists until there arises among us some wise, far-seeing prophet, who comes authorised to speak *ex cathedra* on all dental questions.

Pending the advent of some such Messiah, it will be left to us individually to determine, from observation and experience, what course to pursue. There is no doubt in my own mind but that a large proportion of the bicuspid teeth that are lost through decay might be preserved were early attention given to their crowded condition. We all know that after teeth of this class have become attacked by caries they are the most difficult to save : being small and frail—when compared with the molars—they are exceedingly liable to be lost even when skillfully treated. On the other hand they—I am now speaking of the superior bicuspids—are the most important teeth of the entire set, giving, as they do, character to the mouth, and contributing in a most remarkable degree to the beauty of expression, whether in the male or female. If your attention was never directed to it before, please observe these teeth as they disclose their beauty, their symmetry of form, between the rosy lips of the next beautiful girl you meet. Notice how much their presence adds to the perfection of that mouth, and how their absence would detract from that lovely expression. Yet, these almost divine little members are the first to find an early grave. They are buried without remorse in the bloody depths of the spittoon. But over each should be written this epitaph,

MURDERED IN CHILDHOOD,
BY CARELESSNESS AND IGNORANCE.

When we are able to fully realise the importance of these teeth we ought to be capable of comprehending the importance of *preventing* them from decaying. Now, my experience has taught me that this can best be accomplished by giving them the *room*, so as prevent pressure and contact.

Perhaps I should not have written this letter had I not recently seen a case that, to me, was one of anxiety as well as of deep interest, owing to the fact that the patient was placed in my hands with the understanding that I should have *entire* charge of the teeth, and be responsible for good results. I wish you could have seen the case three years ago, and again to-day. As this is impossible, I will try to describe it to you, together with the simple treatment it received.

The patient, a young Miss, of wealthy and refined parents, had erupted the four superior bicuspids, and at the time of her visit to me, the canines were making their appearance. It was plain that these latter teeth could not take their proper and normal positions

without crowding and packing the adjoining teeth closely together. The six-year molars were well and fully developed, although each had a small gold plug in the crown. This patient had a large full mouth, yet a pretty one, and the teeth showed to good advantage. For this, as well as other reasons, her mother was exceedingly anxious that her teeth should be preserved, and their beautiful contour and expression retained. The child was then thirteen years old, and I without hesitation advised the extraction of the first molar teeth. The father had positively forbidden this, his only child, taking anæsthetics of *any kind*, saying he would rather she would lose *every* tooth by *decay* than run *any* risk by the administration of anæsthetics. Thus I was compelled to operate while my little patient was conscious. I extracted one molar—the left ;—the pain, of course, was very severe, and the patient *utterly* and *absolutely* refused to submit to the extraction of the other tooth unless she could be “put to sleep.” The edict of the father being unrepealed an adjournment was agreed upon, hoping that in time he would relent and countermand his ukase. But like the laws of the Medes and Persians, his words altereth not, and that right superior molar has not yet been extracted.

It is now three years, and the child of thirteen is a girl of sixteen, and what is the condition of her upper teeth? It is this: On the left side, the side from which the tooth was removed, the bicuspid are separated one-sixteenth of an inch from each other, with the same distance between them and the adjoining teeth—canine and second molar—the space made by the removal of the six-year molar has become obliterated, the second molar has been erupted, and is in a good sound condition, and the canine has fallen nicely into line, the approximal surfaces of the incisors are sound and entirely free from decay. This is the condition of things on the right side of the mouth—the side that retained the six-year molar—viz: the bicuspid are crowded close together, each decayed on both of its approximal surfaces; the first molar with a large mesial cavity; the canine still out of line, with distal and mesial cavities, and the lateral incisor decayed in the same manner—and what is perhaps the strangest of all—the second molar has not been erupted. Look on this picture and then on that. One half of the upper mouth healthy and free from disease, the teeth all sound and presenting a fine appearance. The other half diseased and deformed, with *nine* cavities in the teeth that need immediate attention.

One such case as this preaches a most powerful sermon, and wil

have more weight with me than all the arguments and papers that have been made and written on the subject.

It cannot be said that in this case the conditions differed, and the teeth were of a different structure, for they were all in the same mouth, and were of an average good quality, and all well brushed twice a day.

Yours truly,

GOLD FOIL.

Hospital Reports.

LONDON HOSPITAL.

CASE OF ACUTE DISTENSION OF WHARTON'S DUCT GIVING RISE TO INFLAMMATORY SWELLING, THREATENING SUFFOCATION.

(Under the care of Mr. JAMES ADAMS.)

Eliza Ekins, aged 31, a pale flabby woman, who had been recently confined, and bore the marks of ill-usage, came to the out-patient department at the hospital, on Tuesday, April 25th, complaining of pain under the jaw, chiefly referred to the right side, with swelling of the floor of the mouth on each side of the frænum; and the tongue itself was also swollen. There was also considerable swelling visible externally beneath the jaw on both sides. The mucous membrane on each side of the frænum was raised, forming a considerable prominence, and its surface was covered by a false membrane, which was tough but not very firmly adherent; when it was removed, the surface beneath bled but little, and the membrane was quickly renewed. The tongue itself was swollen, notably more on the right side; and there was a distinct hard mass in the muscular substance of the organ on that side. The false membrane contained no vegetable fungus, and consisted entirely of epithelium. The mouth was always open, and there was constant dribbling of saliva. At this time, with the exception of the slight tendency in the disease to be somewhat unilateral, it appeared to be an ordinary inflammatory mischief, and closely resembled a case of suppuration of the deep connective tissue of the neck, several examples of which have come under notice, one being of special interest as occurring in connection with trichinosis. On the 28th she was admitted into the hospital. During the next two days, the swelling of the tongue and submaxillary region increased somewhat, but I could not satisfy myself that

there was any fluctuation. She had two attacks of urgent dyspnœa, but they were not of long duration. On the morning of May 2nd she expressed herself as being much better, and said that something had burst under the tongue during the night, and that a large quantity of yellowish fluid had escaped. The swelling was now much less; pressure beneath the jaw caused the fluid to pour out through an opening on the right of the frænum. A probe introduced through this led into a large cavity, which extended upwards into the substance of the tongue, and downwards in the direction of the submaxillary gland. From this time recovery was rapid, the only treatment required being to wash out the cavity with a weak solution of Condyl's fluid. She went out, and was told to show herself from time to time, but never re-appeared.

Since seeing the above case, I have met with another amongst my out-patients, which seems to me to be most probably of the same kind. The patient was a child about 10 years, and her mother gave a history of a rapid swelling beneath the jaw on the right side, great swelling of the tongue with protrusion, and constant dribbling of saliva, and said that on the morning of the third day something broke while the child was asleep, and there was a copious discharge of greenish yellow fluid. On the fourth day, when I saw her, the swelling had greatly subsided, and there was a ragged opening on the right side of the frænum large enough to admit a No. 5 catheter, and from this there was still escaping fluid of the above-mentioned characters. The direction of the cavity in this case was the same as in the other, only it did not extend into the tongue.

From the one-sided symptoms, the situation of the natural point of opening, and the peculiar glairy character of the secretion, I have no doubt that both these swellings were caused by dilatation of Wharton's or some other adjacent duct; but in the absence of any visible mechanical cause of obstruction (such as salivary calculus) it is difficult to account for the acuteness of the symptoms. These are the only cases of this kind that have occurred in my own practice, but I have lately learned that several others have been known in this hospital.

The early recognition of the disease, and a timely incision, would doubtless save the patient much pain, and some risk, as in one case the dyspnœa actually proved fatal.

Odontological Society of Great Britain.

The meetings of this Society were resumed on Monday, November 6th, when there was a good gathering of members, under the presidency of CHARLES VASEY, Esq.

The first portion of the evening was, as usual, set apart for casual communications.

Mr. WHITE said when it was unavoidable that a fastening should be attached within sight to the front teeth, it had been generally recommended to put a little floss silk round. Having found the disadvantage of that practice on many occasions he had lately employed a solution of pink rubber in benzoline for the purpose of coating the fastening; that hid the fastening and seemed to be tolerably permanent.

Mr. FOTHERGILL produced models of a regulating case in which all the upper incisors closed within the lower, the canines closed outside the lower, and the laterals were quite close to the bicuspid. The right first bicuspid and left first molar were extracted, being very much decayed, and the incisors brought into place by a vulcanite piece inside with gold tabs to cause them to bite over, drawing the canines and bicuspid into place by means of bands. The process was commenced in the middle of April and completed by the beginning of September.

Mr. HUTCHINSON presented models of curious cases of dentition which had occurred in private practice. In one case there was a germinated lateral incisor. In the next a supernumerary tooth had taken the unusual place of the mesial line of the mouth separating the two centrals to the extent of nearly half an inch. The especial interest of the case was that it seemed to be hereditary, both the mother and aunt of the patient having had a similar tooth. A third model furnished an illustration of the long persistence of the temporary second molar teeth.

Mr. TURNER said a drill adapted to piercing a tooth or stopping had been sent to the Society by Mr. Macadam, jun., of Hereford. The drill was stated to be especially adapted for use with the burring engine. Mr. Bruce, of Valparaiso, had sent some specimens of old mineral teeth. He observed that Mr. Fothergill in the model he had brought forward used a brown india-rubber ring. They could get better

rings by cutting them off india-rubber tubes instead of buying them ready made. Such rings would lie better round the teeth, were tougher, and would last longer.

Mr. COLEMAN said he preferred rings cut out of rubber dam. By that means they got rings of pure rubber, very elastic, and as a rule they would last longer than any vulcanised rubber cut from tubes.

Mr. HUTCHINSON said that pure rubber tubing was made for use with the spray apparatus, and by using that they got the advantage of the shape of the ring, and absence of vulcanised caoutchouc.

Mr. MOON mentioned a plan which he had found useful, both in hospital and private practice of checking certain irregularity by filing the front surface of the temporary lower canine and the lingual surface of the upper, so as to form inclined planes and to direct the lower jaw backwards behind the upper teeth.

The PRESIDENT said that would only be applicable in those cases where the development had proceeded to the extent that teeth met each other.

Mr. WHITE inquired if Mr. Fothergill had found any tendency in the canines to run out since they were brought in. He generally found if the teeth were got in there was a great tendency for them to run out again. In one case where he had brought in the whole of the six incisors, which laid over the lower lip of a young lady who wore the plate for two years, he found two years afterwards they were out again very nearly a quarter of an inch.

Mr. FOTHERGILL said no such tendency had at present been exhibited in the case he had mentioned.

Mr. POLLOCK then read a paper on "The Treatment of Alveolar Abscess."

Mr. MOON said one cause of the formation of pus in the jaws was the rupture of the nutrient vessels at the end of the root. He believed, in opposition to Mr. Salter's views, that much more frequently than otherwise alveolar abscesses would result sooner or later where the pulp was dead, and no vent was given to the product of the decomposed pulp. As an instance of the serious results of alveolar abscess, he narrated a case in which Dr. Goodhart traced on the post-mortem table the cause of death to an alveolar abscess about the lower molar. Though it was the safest mode of treatment in all these cases to extract the teeth, still in many cases—

and especially in the upper teeth—simply giving vent to the products of decomposition in the pulp chamber, or in the abscess at the end of the root, was sufficient; and vent might be given by keeping patent the canal which ran down the root of the tooth. That might be done by drilling into the root canal, syringing, getting the abscess into a healthy condition, and leaving the opening in such a position that it would not become blocked; or a tube might be inserted up the root, and so the most perfect ventilation be provided to the abscess sac. Such a root, which had been the subject of extensive alveolar abscess, might support for a lifetime the crown of a tooth with very great comfort and absolute safety.

Mr. TOMES said that Wedl, in his "Pathology of the Teeth," records a case of an abscess dependent on some lesion of the lower teeth, where the matter, having to make its exit through the walls of the alveolus, burrowed out between the periosteum and the bone, and ran up as far as the condyle; there it made its way to the base of the sphenoid, and eventually some portion of the pus found its way into the interior of the skull and caused death. He supported Mr. Moon's protest against the extraction of teeth in all cases. Perhaps in nine cases out of ten where there was abscess of the antrum they would do the best for their patients by removing the tooth, enlarging the opening already existing, and so clearing it out. But it was quite possible to treat such a case without sacrificing the tooth, or making any other perforation. When in New York he saw a case of abscess of the antrum of seven or eight weeks' standing, in which the discharge from the nostril was so offensive that people could hardly stop in the same room with the patient, and yet it was treated without the extraction of any tooth or perforation of the antrum. The abscess arose from the second bicuspid; the root of the tooth was drilled, and then various disinfectants were syringed into the antrum. It happened in that particular case, the opening into the nose was large and patent, so that they were able thoroughly and effectually to syringe out the antrum. Such treatment was not likely to succeed unless the opening was somewhat large and free.

Mr. COLEMAN said the Society was extremely indebted to Mr. Pollock for the paper, especially coming as it did from the surgical side of the question. Dentists were rather apt,

perhaps, to look at the mouth for an explanation of every disease that came under their notice, and it was as well that they should sometimes hear what surgeons had to say on these subjects. When they met with cases dependent upon the teeth, and by operation were enabled to effect a cure, they must not take too great credit to themselves, but perhaps should rather take discredit in the same degree when, after extracting teeth, they find the disease with which they were dealing did not arise from that source.

Mr. GADDES asked whether Mr. Pollock agreed with Mr. Salter in ascribing the causes of alveolar abscesses becoming deep-seated, opening externally, to a long fang, shallow sulcus, and the abscess sac burrowing deeply.

The PRESIDENT, with reference to Hunter's remark as to abscesses opening externally depending on canine teeth, said, though he had seen many abscesses arising from the bicuspid and molars, he did not remember one case in which the canine was the cause of that condition.

Mr. SEWILL said he had recorded in the "Transactions" a case of abscess in the inner canthus of the eye, evidently arising from a canine tooth. The tooth was extracted, and the disease cured. One thing they had to contend with in hospital practice was a popular belief that if the tooth was extracted when suppuration was going on harm would arise, and so the patients waited until the swelling went down; the result being very often, that, during the process of the swelling up and going down, an external-fistulous orifice was formed, or necrosis of the jaw might result; whereas if the tooth was extracted at first the whole mischief would subside.

Mr. TURNER said the importance which Hunter attached to the position of the fang was not so much to its length as to its relative position to the mucous membrane, which unites the cheek with the alveolar process; that as the fangs rose beyond the mucous membrane, they were more likely to have alveolar abscess burrowing outwards. With reference to the canine teeth, although the fangs were long, they were not in that predicament, for if the fang rose very high into the abscess, so did the contour of the mucous membrane of that portion of the lip, and therefore, for Hunter's own reasons, they would not look for an abscess such as he described. As an instance of the way in which dentists might sometimes be misled, he quoted the case of a

patient for whom he was asked to remove some roots, and to perforate the antrum, as she was supposed to be suffering from disease of the antrum ; the fact was she was suffering from nothing of the kind. She had what appeared to be a condition of chronic inflammation of the nasal membrane, and obtained no relief from the opening into the antrum. She had afterwards to be treated for chronic ozæna. This was a case which was approached with a considerable amount of confidence and with every prospect of success, but the treatment proved an utter failure. They were frequently called upon to remove teeth for these obscure diseases, and were able to save them, when if they had fallen into the hands of people unfamiliar with dental practice they would have been sacrificed.

The PRESIDENT said, with reference to Mr. Sewill's observations, he did not mean to say that cases of perforation through the cheek from canine teeth never occurred, but that though he had seen many such external abscesses he had never seen one resulting from that particular tooth.

Mr. DAVID HEPBURN mentioned a case in a patient who came to the hospital with a large and brawney swelling on one side of the neck, extending from the ear to clavicle, and obtained relief from the extraction of a lower molar and wisdom tooth, though subsequently having gone into a general hospital for further surgical treatment he died.

Mr. POLLOCK, in reply, said : He feared he had hitherto looked at teeth merely as a surgeon, and not as a dentist, and had not attached quite the value to them which gentlemen of the dental profession were disposed to do. He might possibly in future modify his practice a little, and advise patients to have their teeth "drilled" instead of being extracted. The fact was, however, in one serious case that he had mentioned, in which the lady's eye was prominent and there was occasionally double vision, the tooth had already been drilled. With regard to Mr. Gaddes' inquiry, he said he had not gone into the pathology of alveolar abscess, but took for granted all that had been written and said on the subject ; he was therefore unable to give an opinion upon the point submitted to him.

The thanks of the meeting were given to Mr. Pollock and

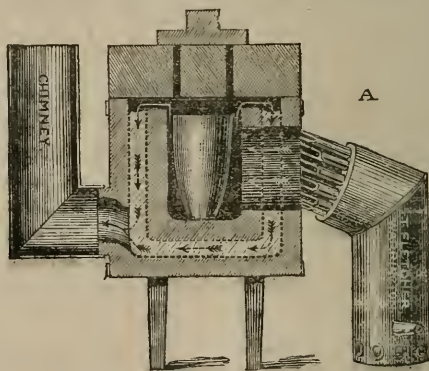
to the gentlemen who had taken part in the evening's proceedings, and the Society adjourned.

[Up to time of going to press we have not received copy of Mr. Pollock's Paper. We hope, however, to publish it in our next.]

New Inventions.

FLETCHER'S COMBINED CRUCIBLE AND MUFFLE FURNACE IN ONE,

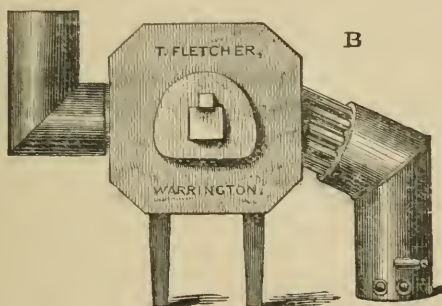
Without any loose internal fittings or parts, and requiring neither blast nor attention. This represents a great advance in draft gas furnaces, which have been up to the present time delicate, complicated, and requiring fragile and expensive internal fittings. It has always been taken as a law that the furnace burner must of necessity be upright, and therefore in a position most exposed to injury in case of accident, entailing also considerable difficulty in supporting the crucible. The burner of this furnace not only works satisfactorily on its side, but gives a duty for the gas consumption equal to that of the best upright burners ever constructed.



Arranged as a Crucible Furnace.

The heat is utilised to the fullest extent by return flues in the body of the casing which act as a regenerator, and also by the use of the special non-conducting material, the discovery of which enabled the enormously high temperatures to be obtained in the Injector Furnaces brought out

last year. This furnace is not designed or intended as a high temperature furnace, the maximum being barely the fusing point of cast iron, but it is designed for the thousand and one uses for which a furnace giving moderate heat is so urgently needed by jewellers, analysts, assayers, &c. When placed with the lid on the top (first engraving), it forms a simple and efficient crucible furnace, taking crucibles not exceeding 4 inches by 2½ inches. The crucible stands on the solid bottom of the furnace below the level of the burner opening. When turned over on its side (second engraving), it forms an equally simple and efficient Muffle Furnace, so simple that any jeweller may at once assay correctly in his shop any samples of precious metal offered for sale. The burner requires a $\frac{3}{4}$ clear bore gas pipe and a meter tap (common gas taps choke the gas supply seriously). When the furnace is used for Muffles a top or bottom heat can be obtained at will by raising or lowering the lid in which the mouth of the Muffle fits.



Turned over on its side as a Muffle Furnace.

This furnace is at present only made in one size, as above. The gas supply must be sufficient for the burner to have a slight tinge of white in the flame, which must also be just visible at the hole in the chimney elbow. Owing to the chimney hole being at a lower level than the burner, the flame requires a few seconds before the chimney begins to draw. This can be prevented by holding the lighted burner against the chimney for three or four seconds to warm it, but in practice this will not be found necessary.

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médical.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM OCTOBER 1ST TO OCTOBER 31ST, 1876.

Extractions.	Children under 14	-	-	-	-	-	502
	Adults	-	-	-	-	-	623
Under Anæsthesia	-	-	-	-	-	-	300
Gold Stoppings	-	-	-	-	-	-	179
White Foil ditto	-	-	-	-	-	-	48
Plastic ditto	-	-	-	-	-	-	245
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	-	13
Miscellaneous Cases	-	-	-	-	-	-	144
Advice Cases	-	-	-	-	-	-	126

Total - - 2180

JAMES MERSON, *Dental House Surgeon.*

qui

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE Monthly Review OF DENTAL SURGERY.

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THE MONTHLY REVIEW OF DENTAL SURGERY.

No. VII.

DECEMBER, 1876.

VOL. V.

The Dublin Dental Dispensary.

The action recently brought against Mr. H. Clifford Eskell, in the Court of Common Pleas, Dublin, clearly shows that the Dublin Dental Dispensary must either be thoroughly re-organised or else shut up altogether. The plaintiff's counsel brought out in evidence that Mr. Eskell did not attend the patient who brought the action, and further, that the gentleman who did attend the patient at the Dispensary for him was not qualified, inasmuch as he possessed no Dental Diploma; and further—as shown by the evidence—that he failed altogether in recognising the fact that the plaintiff, Farrell, was suffering from a malignant disease of the jaw.

With the origin of the action we have nothing to do, so far as it may be referred to professional jealousy, although we very much mistrust such an explanation of it. But we have a good deal to do with the fact that Mr. Clifford Eskell is endeavouring to do that which is clearly impossible—namely, see 200 patients a week at the Dublin Dental Dispensary, ostensibly without any help from any qualified Dental Surgeon.

It has now been shown that the aid necessary has been given to Mr. Eskell by his private assistant, who professes

no higher qualification than being competent to extract a tooth. We really must protest against such a course of action as Mr. Eskell has apparently been in the habit of adopting, and point out that a public charity must not be worked by deputy, and certainly not by an unqualified *locum tenens*.

At the opening of the Dublin Dental Dispensary, we spoke strongly against Mr. H. Clifford Eskell being the only Dental Surgeon on the Staff. The recent action has confirmed us in the view we then took of the matter. The prosecution in the recent case properly failed; but Mr. Eskell, at the bar of professional opinion, will stand condemned unless he seeks the co-operation of his fellow Dental practitioners in carrying on the work (which, we are willing to believe, he has commenced in all good faith), or, failing to obtain their assistance, in justice to his own reputation, shuts up the institution entirely.

The Month.

ASH AND SONS' CIRCULAR PELLETS.

We have nothing but praise for Messrs. Ash and Sons' Circular Pellets; we have used them ever since they came out, with the greatest satisfaction. They supply a great want, and we shall be glad to see the same idea carried out to the fullest extent.

MESSRS. SMALES' DEPÔT.

Messrs. Smale Brothers have recently opened a new show-room that will well repay a visit. A great variety of American chairs may now be seen, and a very good selection of American and English cabinets. One of Archer's patterns seems to be exceedingly convenient and useful. A new press, for closing flasks, introduced by Messrs. Smale, is especially worthy of note.

MR. W. J. BARKAS has been lecturing on the structure of a tooth in Australia. The lectures have been published in 'The Australian Town and Country.'

THE DENTAL HOSPITAL OF LONDON.

The new Calendar for 1877 being in preparation, the Dean will be obliged if those gentlemen in whose diplomas, appointments, or addresses there is any alteration will notify the same to him in writing as soon as possible.

THE DEPÔT OF THE DENTAL MANUFACTURING COMPANY.

The melancholy representatives of the late Mr. W. T. Taylor have disappeared from Broad-street, and this well-known depôt has at last a bright and cheerful appearance, under the management of Mr. Brewster, the secretary of the Company. We noticed a novel pattern in spittoons, of which we hope to say more hereafter; and we have received one of Mr. Vanderpant's saliva bags, which must certainly be chiefly commended on account of its usefulness. Other novelties we shall take some other opportunity of noticing.

MR. OAKLEY-COLES' MALLET CHISELS.

Messrs. Ash and Sons have produced a series of enamel chisels for Kirby's mallet, at the suggestion of Mr. Oakley-Coles. We think they will be very useful, saving both time and labour in breaking down the walls of cavities in all parts of the mouth. We believe they will be shown at the next meeting of the Odontological Society.

A MEDICAL PROSECUTION.

The *Irish Times* reports rather a curious case which came before the Court of Common Pleas on the 8th ult. A car-driver sued the defendant, Mr. Eskill, dentist, for the unskilful performance of a dental operation, estimating the damage done to his "canine" at the moderate figure of 500*l.* To the lay mind there appears to be some confusion in the case, for although the action was brought against Mr. Eskill, the damage, if any, was inflicted by a Mr. Forrester, who handled the probe. However this may be, it appeared on evidence that the patient had been affected for some time with cancer of the gum, and that Mr. Forrester merely employed the probe for the purpose of ascertaining how far the pain of which the man complained depended on the tooth. He did not at the time recognise the cancerous nature of the tumour. After hearing several eminent surgical witnesses, who testified that the use of the probe was justifiable, and that no injury had been inflicted on the gum, the jury, without leaving the box, found a verdict for the defendant.—*Medical Examiner.*

SOCIETÀ ODONTOLOGICA ITALIANA.

On the 18th and 19th September of this year a large number of Italian dentists held a meeting at which it was agreed to found a Dental Society, which was to be called "Società Odontologica Italiana," and the following gentlemen were elected as acting members.

Dr. C. Campani, President. N. G. Winderling, Vice-President.

P. F. Sirletti, A. Obiglio, G. Mela, C. Dunn, C. S. Bright, Dr. U. Testi,	}	Committee.
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Dr. Alberto Coulliaux, Secretary. N. L. Winderling, Treasurer.

The organ of the Society is to be the "Giornale di Corrispondenza dei dentisti," edited by Dr. A. Coulliaux, Milan. Published by C. Ash and Sons, Berlin.—Italian edition or translation of the *Correspondenz Blatt für Zahnärzte*.

THE Sixteenth Anniversary of the Central Society of German Dentists will take place at Leipzig at the beginning of August, 1877.

AT the meeting of the "American Dental Society of Europe," which was held in Paris in the month of August, there were about twenty-five dentists present. The next meeting is to take place at Interlaken; the meetings themselves commence on the first Tuesday in May.

Dr. E. JANTZEN, of Schwerin, and HROCH, of Zittau, have lately died.

SINCE July of this year a new Italian periodical has appeared monthly, published and edited by Luigi Ribolla, Dental Surgeon at Naples, under the title of "Odontologia."

THE *Revue des deux Mondes* has an article upon Transplantation of the tooth germ. It is stated that a successful experiment was made by taking the tooth follicle from a new-born dog and planting it in a full-grown one. By this means the formation of a perfect tooth was arrived at.

Hæmorrhage after Dental Operations.

A CLINIC DELIVERED AT THE NATIONAL DENTAL HOSPITAL, ON
WEDNESDAY, NOVEMBER 29TH,

By G. J. WILLIAMS, L.D.S., Dental Surgeon to the Hospital.

GENTLEMEN,—I purpose this morning to devote a little of our time to the consideration of a subject which often presents itself to our notice, and occasionally may do so to a dangerous degree—viz., hæmorrhage after operations in the mouth, principally after extraction. In ordinary cases, as you well know, bleeding will soon cease simultaneously after extraction, but there is a state of system in which great difficulty is experienced in arresting the flow of blood, and which may be so profuse as to endanger the life of the patient, and this state of system has been called the hæmorrhagic diathesis, and persons having this diathesis have a predisposition to bleed upon the most trivial lesions, and when such bleeding takes place most difficult to arrest. It is not a disease in itself, but may be hereditary, or the results of certain diseases, and seems dependent upon a modification, chemical or physical, or both, in the blood and circulatory system, in which the fibrine has undergone some change and lost its coagulating power. The possessors of this temperament are generally anæmic in look, and the pulse will present more the appearance of a flowing than a bounding stream, and when in years seeming more feeble than their age would warrant. It is always wise to get as much information of the previous life of your patient, as regards health, &c., as you can, and this you may easily do by a little conversation previous to operating, and when you have a well-defined case of predisposition to hæmorrhage it will be best to put your patient under a regimen of good diet, or a tonic of iron, or one of the mineral acids three times a day for a week before operating, and strongly advise the abstinence of alcohol in any form. Of course, I allude here to any operations likely to cause a severance of blood-vessels, there may be times in which diagnosis is difficult or operation imperative, and it is to those cases all your knowledge must be brought to bear to enable you to conduct one of the most dangerous lesions your profession may present to you, and dangerous it is to a degree; there are several well-recorded cases of deaths arising from hæmorrhage after tooth extraction. One, a well marked one, in the practice

of Mr. Roberts, and recorded in the *Medical Gazette* in the year 1842. I have had several anxious cases occur in my own practice, and one patient nearly lost from exhaustion after extraction. I have taken the following from my note-book respecting the case:—J. M., æt. about 20, wished some stumps, which had given her a great deal of pain, removed under chloroform, which was administered, as nitrous oxide was not in use then, and some six fangs were extracted, being those of the lower molars and second bicuspid; they were not difficult to remove, and there was nothing to cause anxiety; the bleeding seemed to cease before leaving the surgery, and there was no more prostration than the chloroform would lead you to expect. The patient rode home, had some soup for lunch, and a glass of sherry, and reclined on the couch. About five o'clock in the afternoon, the extraction having occurred about one, the patient had a cup of tea, and retired to her room. One of her sisters went to see her about seven o'clock, and reported her very comfortable asleep. About 10.30 they found her in the same position, but thought she looked paler than usual. Upon turning down the bed-clothes, they found the pillow, bed, &c., saturated with blood, which had trickled out of the corner of the mouth as she lay upon the pillow; no doubt ever since she went to bed at five o'clock, and, as you may suppose, must have lost a large quantity of blood. They then sent for me, and upon my arrival I found my patient in that drowsy state which shows great exhaustion, and in a very low condition; the radial pulse was hardly discernable, and I felt extremely anxious for my patient. I stopped the bleeding, and watched for two hours without finding any return, and attended from time to time, but all went well; still it was a long time before she had recovered her normal state. Upon inquiry, I found it had been bleeding ever since the soup had been taken, but so trifling that they thought it would soon cease. The warm cup of tea, given as a restorative at five o'clock, acted no doubt quite the reverse, giving fresh impetus to the stream.

This case presented no difficult feature as to stopping the flow of blood; it was soon done when assistance was at hand, but for want of that assistance the patient nearly lost her life. I have often noticed a disposition to bleed longer than usual, after the inhalations of chloroform, as though the blood seemed thinner, or the severed blood-vessels

had lost their contractile power. I would also guard you against what I should call the expectant method—that is, thinking that in a little time the blood will form a clot and stop the effusion; for, generally speaking, you will rest on a broken reed if you do, for as time increases so will the flow of blood increase, and the divided artery will lose whatever firmness it may have had at the time of severance.

There are many kinds of operations that may present itself to the dental surgeon where this temperament may cause some little trouble and anxiety—in the infant whilst teething, when that swollen, congested state of the gums seem to denote the application of a lancet as the proper remedy for ease and liberation. Of course, I need not tell you that here much bleeding would be very dangerous, and whenever there is disposition so to do you must at once use measures to stop the same, and the nitrate of silver will perhaps be the best application for that purpose, as the use of many styptics will most likely be denied you. Another form of disease is a state of gum that will bleed with the slightest friction, and where this is due to a decayed stump or loose piece of bone, in the neighbourhood of which the gums will be swollen and congested, the remedy is simple: removal of the cause, and a good mop over with chloride of zinc, and in a little time the parts will get well.

Another disease, which we call purpura, or scurvy, in which the whole of the gums are affected, you will do well not to operate, although asked to do so, until the disease is cured, or nearly so, by a course of medicine and diet. Patients, as a rule, think that if anything is the matter with the mouth it is due to a faulty tooth, and extirpation of the offending member is all that is necessary to produce a cure, whilst we all look upon the extraction of a tooth as the opprobrium of dentistry, and do not resort to that extreme without due thought. If this disease is treated with tincture of muriate ferri, in eighteen minim doses, three times a day (if under twelve years old leave off one drop for each year), coupled with a diet in which fruit and vegetables partake liberally, and cleanliness will soon restore the patient to a state of health, in which you may proceed to operate, but during the disease don't attempt—not even advise—a leech to be applied, for after leech bites the bleeding is more difficult to stop than after a puncture. A simple wash of alum may be used with advantage, but the iron

must be taken for a time. Another form of disease sometimes presents itself to the dental surgeon, which is troublesome, but not dangerous. Small growths appear on the gums, known as epulis, which when removed present a spongy bleeding pedicle for treatment; these will generally succumb to an application of powdered tannin or other astringent, or it may be necessary to freely cauterise the spots. One very disagreeable and obstinate lesion, though rather a rare one, came under my notice once. A child running about with a piece of tobacco pipe in its mouth fell down and wounded the palatine artery, which would not cease bleeding until the actual cautery was applied, a remedy for most bleeding vessels, but not always capable of application. We now come to the consideration of that lesion, causing hæmorrhage, which will perhaps most often present itself to your notice, *i.e.*, excessive bleeding after tooth extraction. This will mostly arise from the severance of the branch of artery at the apex of the tooth; ordinarily after tooth extraction, the severed ends of the artery will contract and stay the flow of blood which coagulates under its surface, and no further danger is felt; but from disease or other causes the artery will not contract, or the blood coagulate, and when that is found to be the case, it is well to at once grasp the difficulty, and begin treatment rather than trust to time to do it for you. As I mentioned before if you can ascertain that your patient has a predisposition to hæmorrhage, you will do well not to operate until you have tried every mode of treatment possible, even if the tooth may be loose in its socket, the danger still lies, and you will do well to let nature absorb, or sever the connection between the point of artery and tooth; but if actually necessary to extract, it will be best to fortify your patient with a course of tonic medicine, and the mineral acids as recommended by Mr. Richardson are by far the best, given in twenty minim doses, three times a day, and advise total abstinence from all alcoholic drinks.

We will now consider the treatment necessary to stay the hæmorrhage when you find after removing the tooth that such treatment is necessary. The use of styptics only will not avail you, be they never so good, and the cautery is difficult of application. What have we at hand to stop the flow of blood, for stopped it must be, or your patient will bleed to death. Why a plug and the judicious use of the

same will generally stop the bleeding. It has been recommended to reinsert the extracted member, and this would certainly present the best fitting plug we could have. But having once undergone the terror of extraction, the patient would, I think, prefer its non-replacement, and it is not quite certain that any pressure exercised would touch the wounded artery. Mr. Tomes recommends the use of a leaf of matico rolled up and placed in the cavity, with layers of lint on the top; and each one has no doubt some special way of his own. In the cases coming under my own observation, I proceed as follows:—I carefully remove any coagulum there may be in the cavity, then syringe out well with a strong solution of nitric acid, and then apply pluggets of lint; the first one being immersed in carbolic acid, the others added in not too large pieces until they reach above the adjoining teeth, so that by the closing of the mouth good pressure is exercised, and this should be kept continuous by passing a bandage under the chin and tying at the top of the head. Upon resuming the recumbent position, the head should be kept high, cold drinks should be administered, and a mixture of acids should be given frequently, or the tinct. muriate ferri; alcohol should be discarded absolutely. I would here point out to you the necessity, whenever to administer acids, to advise their being taken through a quill; and it is best, whenever practicable, to get the patient to rinse the mouth out after taking the acid with a carbonate of soda mixture, about a drachm to a tumbler of water, which will do much to preserve the teeth that may remain; of course, in the subject under consideration, such a procedure would be impracticable, the stopping of the hæmorrhage being our first anxiety. After two or three hours have elapsed without any return of the symptoms, showing that your plug is doing its work properly, the patient may be left for twenty-four hours, when the bandage may be removed, and, after some further time, the pluggets may be taken out, great care being exercised in their removal, or a recurrence may take place. It has been recommended to cut a cork and place in the alveolus to act instead of the pluggets of lint, and no doubt it would be useful; but I have never found the lint fail me when direct pressure is applied. There are several styptics that may be used instead of the carbolic acid—preparations of iron, and Dr. Richardson's xylo-styptic ether, a very valuable preparation; but I

prefer the carbolic acid, it acting as a styptic, an escharotic, and a disinfectant—three very valuable attributes for such a purpose as we here use it. There has also been a very ingenious instrument invented by Dr. Reid, of Edinburgh, for applying pressure instead of the bandage. I have never used it myself, not having one by me when wanted, and, finding a handkerchief or napkin close to hand, have used them, and found them answer every purpose. The points I have wished to place before you in this clinic is, first, to study well your case before interfering; secondly, to be careful in operating not to injure the adjacent structures more than is possible; thirdly, that when you find excessive bleeding, to apply at once pressure *direct* upon the severed vessels, and keep that pressure there until all danger is passed; administering internal remedies to assist you, of which the acids and preparations of iron offer the best advantages. And, lastly, in all matters to be attentive to what may appear trifles, as such trifles may form the simple springs of which rivers are made, and according to that attention so will follow success or failure in practice as in life.

Abstract of Two Lectures on Inflammation.

DELIVERED AT THE NATIONAL DENTAL HOSPITAL, NOVEMBER AND DECEMBER, 1876,

By THOMAS GADDES, L.D.S.,
Assistant Dental Surgeon to the Hospital.

LECTURE I.

Inflammation is a very extensive subject, to thoroughly investigate which many lectures would be required. So if I can pick out, and briefly explain to you some of the major points, and the phenomena of those, perhaps you will better comprehend the subject in your reading. Inflammation in some form, or in some degree, is present in most of the diseases that either the physician or the surgeon has to treat, notably the fevers, phthisis, syphilis, &c. Almost every tissue of the body is liable to inflammation, and a "knowledge of the various phenomena of this process,—their causes, and relations, and effects—may be said to constitute the master-key to the comprehension of the nature of a large amount of disease"; and this "master-key" is a possession of the first importance to the skilful dental surgeon. Therefore, gentlemen, I recommend you to give the subject of in-

flammation your very careful study : you may find it “dry,” but according to your mastery thereof will your knowledge and treatment of disease be sweetly succulent—more successful.

Pathologists have not yet agreed upon a definition of inflammation. Dr. Hughes Bennett has termed it “perverted nutrition.” It is sometimes a formative, and sometimes a destructive process ; but the most important and essential constituents in inflammation are certain changes in the blood-vessels and circulation of the part.

THE COMPONENT PARTS of an inflamed structure are :—

1. *Active Hyperæmia*, or determination of blood.

This increased amount of blood in the part is due to dilatation of the arteries ; at the same time the flow of blood is accelerated in these dilated vessels. The causes of these two conditions which characterise active arterial hyperæmia are

- (a.) Increased blood-pressure, and mainly,
- (b.) Diminished arterial resistance.

(a.) Most commonly results from interruption of the current of blood in any particular part, causing thereby a determination and consequent increased pressure of blood in the adjacent parts.

(b.) Results from relaxation of the walls of the small arteries. This relaxation may amount to paralysis. Simple active hyperæmia, the result of diminished arterial resistance, caused by relaxation of the vaso-motor nerves, is notably seen in blushing. This relaxation of the vaso-motor nerves is emotional ; but by irritating a sensitive nerve, and according to the degree and amount of irritation, will the mere passive relaxation pass into paralysis of the walls of the small arteries, and thus influence the amount and flow of blood in the capillaries. The small arteries also become elongated, waved, and tortuous.

2. *Passive Hyperæmia or Congestion*.—In this condition the excess of blood is principally in the veins, and the flow is retarded. The causes of this venous hyperæmia are principally those conditions which interfere with the return of blood by the veins, *e.g.*, an obstruction to some parts of the circulation ; gravitation, particularly when associated with, and also, diminished power of the heart, &c.

3. *Stasis or Stagnation*.—As the blood-stream becomes slower and slower, the blood corpuscles adhere to the sides of the vessels and to each other, thus blocking up the vessels and arresting the circulation. With this condition there is associated—

4. *Exudation* of liquor sanguinis and migration of blood corpuscles. Of exudation Dr. Beale says: "During life a watery solution of nutrient constituents slowly transudes through or permeates the passive membranous tissue of the capillaries, which thus acts as a filter. If, however, the capillaries be much distended the membranous wall is stretched and rendered thinner in a corresponding degree, and, in consequence, besides mere watery fluid, serum holding in suspension minute particles of bioplasm traverse the capillary wall." Our present knowledge of the passage of the white blood corpuscles through the walls of the vessels is intimately associated with the name of Cohnheim, whose minute investigations of this particular subject are generally accepted. Where the migration is about to take place a small elevation is seen upon the outer wall of the vessel opposite to a spot where a white corpuscle is clinging within. This elevation becomes larger and larger, and the corpuscle within smaller and smaller, until at length the passage is completed, and the leucocyte is quite free outside the vessel, the opening in which subsequently closing. These white blood corpuscles, or leucocytes, are capable of exhibiting quick amæboid movements, sending out processes and actively undergoing various alterations in shape. It is by this amæboid activity that their migration is accomplished. The red blood corpuscles also pass through the walls of the vessels, though in considerably less numbers; and their transit is mainly through the walls of the capillaries, while that of the white corpuscles is principally through the small veins.

5. *Alteration in the nutrition* of the inflamed tissue. There are different theories as to the cause of this increased nutrition, but it is probably due to the exudation of the liquor sanguinis. Dr. Beale says: "Whenever fluid in which are suspended living particles stagnates, the conditions are favourable for the absorption by the living bioplasts of an increased quantity of nutrient material;" thus the cellular elements of the part take up pabulum, grow, and multiply a hundred-fold. This cell nutrition and

proliferation I shall again allude to when I speak of chronic inflammation.

The SYMPTOMS of inflammation are (1) *local* and (2) *constitutional*.

(1.) *Local Symptoms* :—

- a. Redness.
- b. Swelling.
- c. Heat.
- d. Pain.
- e. Modification of function of part.

(a.) Redness, or change of colour, depends upon the increased quantity of blood in the vessels of the part. This is proved by it disappearing on pressure, and the return of the original redness on removal of the pressure. The tint depends upon the tissue affected and the degree of congestion; being bright red in acute, and dark red or livid in chronic inflammation.

(b.) Swelling is due partly to the increase of blood in the part; to the proliferation of the cellular elements of the tissues; to migration and subsequent proliferation of the colourless blood corpuscles; and, to a considerable extent, to the transudation of the liquor sanguinis.

(c.) Heat is due to the increased amount of blood, yet it is doubtful whether the local temperature exceeds that of the mass of the blood. Some state that heat is also generated from the active processes of cell nutrition and proliferation which are carried on, having found that the venous blood returning from the inflamed part was hotter than the arterial blood going to it.

(d.) Pain (a subjective symptom) is caused by stretching and compression of the nerve fibrils by the dilated vessels, and the exuded matter into the adjacent tissues. The character and degree of pain will be according to the structure affected, being most acute in unyielding and confined tissues, as bone, fascia, and tooth pulp.

(e.) Modification of function of the part is a result of the abnormal condition, whereby motion is impaired, sensations exaggerated, secretions altered in quantity and quality.

2. *Constitutional Symptoms* may precede or follow the local, according to the cause. If this be traumatic, the constitutional will follow the local symptoms as a conse-

quence of the contamination of the blood by the decaying tissues that are the seat of the local disease. In idiopathic inflammation the constitutional precede the local symptoms.

The constitutional symptoms are:—

- (a.) Inflammatory fever, or pyrexia.
- (b.) Diminution of the chlorides excreted.
- (c.) Blood which is drawn is found to be “buffed” and “cupped.”

(a.) The fever, which will depend upon the amount and degree of inflammation, may be sthenic, asthenic, or irritative. The sthenic form occurs in individuals of good constitution, and when the inflammation is of an active or acute character. The asthenic fever occurs when the constitution is broken by dissipation or other vitiating influences, and is characterised by debility. The irritative fever is usually associated with the asthenic, the nervous system being especially implicated.

(b.) Diminution of the chlorides excreted by the urine. This is accounted for by the large amount of chlorides required in the process of rapid cell development which is taking place in the inflamed part.

(c.) The blood is “buffed and cupped.” These conditions are not characteristic of inflammation; for they generally arise when, from any circumstances, the fibrin coagulates more slowly, or the corpuscles subside more rapidly than in healthy blood. The cupped appearance is due to contraction of the fibrin.

LECTURE II.

In my last lecture, gentlemen, I described the component parts of an inflamed structure, and briefly explained the minute phenomena, with their causes; I gave the symptoms of inflammation, and showed what those appearances and conditions depended upon. To-day I shall relate the causes, varieties, and terminations of inflammation; concluding this very important subject with a summary of the initial changes, and a few remarks upon treatment.

THE CAUSES of Inflammation may be *Exciting* or *Predisposing*, and these may be local, or act locally through the constitution.

Exciting . . .	{	<ul style="list-style-type: none"> (a.) Mechanical and chemical irritation. (b.) Action of cold. (c.) Morbid poison.
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- Local Predis- { (A.) Over-stimulation.
 posing { (B.) Previous inflammation.
 { (C.) Tendency to local congestion.
- Constitutional { (A.) Over-stimulation of vascular and nerv-
 Predisposing { (B.) Depression of vascular and nervous
 systems.

(a.) Mechanical or chemical irritation includes those conditions I have already mentioned as the causes of active hyperæmia; also injuries, presence of foreign bodies, application of the vapour of ammonia, chlorine, &c., to the mucous membranes.

(b.) Action of Cold.—A moderate degree of cold acts as a stimulant, also as a sedative, when applied in certain conditions; beyond these effects it interferes with the chemical and vital actions going on in the blood and tissues.

(c.) Morbid poisons exert such powerful influence over the fine nerve filaments distributed to the capillaries and small arteries, that the nerves governing the calibre of the latter are paralysed, the arteries and capillaries become hyperæmic, and less able to resist the ingress of septic, zymotic, or other poisons—such as syphilis, phosphorus fumes, producing periostitis and necrosis of the jaw, &c.

(A.) Over-stimulation, produced by the over-use or exertion of a part, induces a determination of blood to it, and may readily pass into inflammation.

(B.) Previous inflammation, by which a part has been left in a weakened or impaired condition, will predispose to a second attack, in consequence of the less resisting power, and the greater susceptibility to exciting causes.

(C.) Tendency to local congestion, which, in speaking of the causes of passive hyperæmia, I said would be due to an obstruction to some part of the circulation; gravitation (as in varicose veins of the lower extremities), particularly when associated with, and also, diminished power of the heart. Inflammation, terminating in ulceration, arising from this cause is seen in many ulcers of the leg, particularly varicose ulcers.

(A.) Over-stimulation of the vascular and nervous systems may be brought about by too free indulgence at table, inducing plethora; or it may exist as indicated by

the sanguine temperament : then again, men are more predisposed to inflammation from this cause than women are. Inflammation arising where there is present this constitutional predisposing cause is usually of the sthenic, active or acute, kind.

(B.) Depression of the vascular and nervous systems—the opposite condition to the former—is characterised by want of tone in those systems, and a consequent tendency to congestion, readily leading to inflammation, which is usually of the asthenic or low form.

From this description of the various causes of inflammation, I think you will not fail to understand that where a predisposing cause exists, whether it be of the local or constitutional variety, inflammatory actions will be brought about by a less degree of exciting cause than in an individual in good health, and not so predisposed. This conclusion is of considerable importance to the Dental Surgeon in determining the treatment of the tooth pulp. If this latter predisposing cause of inflammation be present—the patient be in indifferent health, with a condition of system indicating a low, weakly degree of vigour—the treatment of exposed tooth pulp, especially when it is in a suppurating condition, and is treated conservatively or removed, is rarely successful.

VARIETIES of inflammation are *acute*, *sub-acute*, and *chronic*.

In acute inflammation the symptoms are well-marked; the pathological phenomena are active, and the effect or termination is rapidly produced.

In the sub-acute form, as the term indicates, the entire phenomena are mitigated and less marked than in the acute variety.

In chronic inflammation the constituent parts and symptoms are similar to those of the acute form, only differing in degree and duration, resulting from causes less severe and more prolonged. The chief differences in the phenomena of the chronic from the acute variety are mainly in the nutrition of the part. By the slower rate of activity of the processes the elementary cells are in a condition to receive a less amount of nutriment (pabulum), and, instead of excessive cell proliferation, the cells become developed into a more or less fibrillated tissue. That these last phenomena

be better comprehended, accept this histological law:—"An abundant supply of pabulum is associated with rapid growth of the bioplasm, a scanty supply with the production of formed material."—(Beale.)

The TERMINATIONS and results of inflammation are numerous, but I shall mention the following:—

- (a.) Resolution.
- (b.) Metastasis.
- (c.) Becoming chronic.
- (d.) Organisation.
- (e.) Suppuration.

(a.) *Resolution* is characterised by recovery of the part: the nerves and vessels regain their tonicity; the blood is forced onwards; absorption of the exuded substances takes place; and the symptoms gradually disappear. Absorption is effected by the masses of germinal matter—connective tissue corpuscles, lymph corpuscles, bioplasts upon the walls of the small veins and capillaries—taking up the excess of pabulum and adventitious substance exuded. If the cells concerned in this appropriation do not directly pass into the blood (as probably would some of the lymph corpuscles by the lymphatics, and those bioplasts upon the walls of the vessels), they yield their contents to other minute masses of germinal matter, which are so situate as to be taken up by the circulating fluids.

(b.) *Metastasis* is that termination where the inflammation disappears from one part and reappears in another.

(c.) Acute inflammation may become so modified in its various phenomena as to assume or terminate in the *chronic* variety.

(d.) *Organisation* and *development* are effects which I have already shown to frequently take place as the result of chronic inflammation. Organisation and development are physiological processes, by means of which, taking place as results of injury, lesions are generally repaired.

(e.) *Suppuration* is a very frequent result of inflammation, and the more intense the inflammation, the greater is the formation of pus. Pus may be said to consist of pus-cells, liquor puris, and the *débris* of the part. The pus-cells are derived mainly from the exuded white blood corpuscles, also from the lymph and connective tissue corpuscles. These are the sources of the pus-cells, and their number is

increased by proliferation. The liquor puris very much resembles the liquor sanguinis, which exuded fluid it is. By the amœboid movement of, and the appropriation of the formed material of the tissues by, the living pus-cells are the tissues broken down, and that element of the pus—their *débris*—produced.

Pus may collect so as to form an abscess, or it may be discharged from the surface, as in a granulating ulcer.

An abscess may be circumscribed or diffuse. A circumscribed abscess is that where there is a collection of pus surrounded by a limiting wall of fibrin. This fibrin, which is exuded into the surrounding tissues, constitutes the sac of the abscess. The abscess increases in size by the breaking down of the inner wall of the sac by the *living* pus-cells, and by the further coagulation of fibrin upon its periphery. The direction which the sac of an abscess takes is usually that of least resistance—towards the surface; yet, not unfrequently, an abscess will burrow deeply, and even against gravity—as an alveolar abscess opening into the orbit, or into the cavity of the skull.

Preceding the formation of an acute abscess there are present the swelling and other symptoms of inflammation, but as suppuration (or the formation of pus) comes on those symptoms are modified. The pain is less acute, the swelling and induration soften, and fluctuation can usually be felt.

A diffuse abscess frequently results from diffuse inflammation, such as phlegmonous erysipelas, and in which there is no limiting wall of fibrin or abscess sac. The pus consequently spreads widely, and produces extensive destruction of the surrounding parts.

SUMMARY OF INITIAL CHANGES.—(The question was alluded to, whether contraction does not precede dilatation of the small arteries—that their contraction follows the application of certain stimuli, but the diminished calibre is quickly followed by dilatation).

Dilatation of arteries and capillaries, with accelerated flow; dilatation of the veins, with diminished flow; stasis; exudation; migration; exalted cellular nutrition, growth, and proliferation.

Of the TREATMENT of inflammation I shall say little, for this, like the subject itself, is very extensive. I shall therefore draw your attention to the initial changes which I

have summarised for you ; and by a careful study of these you will find that, taking heat and cold as the most important local means, the application of these, and other local agents, cannot be indiscriminate. In active and passive hyperæmia stimulate the dilated vessels to contract by the application of cold, nitrate of silver, iodine, &c. ; abstract blood by scarification and leeches ; use counter irritation ; and, above all, in this, as in all treatment, removal of the cause is of the first importance. Now, if the process has advanced beyond this hyperæmic condition and suppuration is imminent, or coming on, the treatment indicated is the opposite to that just alluded to. Here heat and moisture, the essentials of a poultice, are of the utmost service. By their means "tension is relaxed, effusion is favoured, and the over-distended vessels are relieved," consequently pain is mitigated. Then there is constitutional treatment. Those remedies which lessen the power of the heart, promote secretion by the skin, kidneys, and mucous membranes—as tartar emetic, opium, mercury, saline aperients—have their proper places.

The Art of Medicine in China.

By LEOPOLD KATSCHER.*

One of the most noted medical Chinese works has the following title, "A new Collection of proved (*sic*!) Prescriptions," in eight volumes, and is a kind of house-book for those who cannot get a doctor at all, or where there is not one near. Remedies are found in it for all possible diseases, ills, and troubles.

In this same "Collection" two curious prescriptions are given for toothache. First, take a small head of garlic, crush it, mix the liquor thoroughly with one or two kandarinen of white dragon's bones and apply the mixture to the aching tooth ; the latter will shortly drop out. Dragon's bones ! easily said, but where to be got ? Certainly such named stuff may be got from every apothecary, but who knows what such stuff is. And should any one who has used this prescription complain of its uselessness, Dr. Wang may safely answer, "Then the dragon's bones could not have been genuine, and it is only the genuine that do good." After stating that teeth should not be removed, "because thereby the remaining teeth became hollow," and should only be taken out when the pain actually prevented the possessor of the tooth from eating or drinking, the following is found :—"Take a beam weighing two ounces, divide it, and sprinkle with a dram of powdered

* From original letters from Peking and from 'Chinese Sketches,' by H. A. Giles.

arsenic. Sew the fish together again and hang it up, so that the wind may blow upon it, but neither rats, cats, or the sun has access to it. Let it hang seven days, then spread the crust which has formed on the scales upon a piece of plaster, as much for each tooth which is to be got rid of as is formed on a scale. Press the plaster with the finger against the painful tooth, let the man cough, and—the tooth will fall out. This was," so is especially mentioned at the end, "tried by Wang." Although this remedy is given for the household, or, if necessary, to be used before the arrival of the doctor, or even to render him needless, it is to be anticipated that many, in expectation of future toothache, would take the trouble to prepare so wearisome a medicament, for it is evident that there would be little use in it if the preparation was delayed till the pain occurred. Whether there is anything in the prescription, we doubt; but it appears not impossible that there exists in China some bloodless way of removing teeth. Mr. Giles relates that in the previous year he was passing the shop of a Chinese street-apothecary, who was at the same time doctor and surgeon (somewhat like the English "Surgeon and Chemist.") Whilst he, amongst a number of gazers, was observing with interest the diverse herbs, "dragon's teeth," "tiger's claws," and similar Chinese remedies, a man appeared with visibly severe toothache, and begged the "Doctor" to extract the bad tooth. As soon as the "Doctor" had opened the patient's mouth and looked at the troublesome object, he fetched a little phial, out of which he put some pinkish powder upon his previously wetted finger, with which he then rubbed the tooth three or four times; thereupon he bowed the head of the patient, and behold, to the astonishment of the bystanders and the man himself, the tooth fell out of his mouth without a drop of blood being seen. In reply to the operator, the man said he had not felt the slightest pain. He paid and went his way. Giles asked to see the tooth as he considered it a sham, but on examination it really appeared a freshly extracted tooth. Giles some time afterwards asked the same apothecary for a dose of the powder, but he said he was out of it, and it was only prepared on certain days in certain months. Another European some months ago, in a Chinese newspaper, said that he had convinced himself that many Chinese surgeons easily removed the teeth after rubbing the gums with a white powder. This might be corrosive sublimate of quicksilver. The operation, however, was not so rapid, the rubbing being repeated after ten minutes; and then the dentist, firmly pressing his thumb against the aching tooth, with the assistance of the forefinger rapidly pulled out the tooth: any way, it took place before the man had time to cry out, but not without a good deal of blood. *Et cætera sine gratia in infinitum.*—*Correspondenz-Blatt.*

Alveolar Abscess, dependent on Diseased Teeth.*

By G. D. POLLOCK, F.R.C.S.,

President of the Pathological Society of London.

MR. PRESIDENT AND GENTLEMEN,—The consideration of Alveolar Abscess can be nothing new to the members of the Odontological Society, but it must always be one of interest, as it is by no means an

* Read before the Odontological Society, and reprinted from their Transactions.

uncommon occurrence, and is not unfrequently important in its consequences. Moreover, it is a condition which may especially be said to bring together in consultation the dentist and the surgeon; and, as far as my experience goes, the cause of the mischief is too frequently overlooked by the medical practitioner. I hope, therefore, I need offer no apology in making it the subject of the present communication.

I have so frequently had occasion to call the attention of our pupils at St. George's Hospital to this subject, that I have occasionally almost felt that I might be supposed to be riding a hobby too hard. But your President will bear me witness that, with all we have done and said in past years, the recurrence of such cases—I might almost say monthly—proves that the subject is not too generally or fully appreciated; that the cause is frequently overlooked by the medical attendant, and that the patient is consequently permitted to linger on in discomfort, and often with disfigurement.

Alveolar abscess may be considered as of two varieties—one of a superficial and comparatively innocent character, popularly known as gum-boil; the other of a deeper formation, and complicated with various conditions, and what we may truly designate as perforating alveolar abscess. Gum-boil may occur on either side of the alveolus, forms quickly, and usually, when opened, heals as quickly. I do not propose to deal more with this class of cases than to express the opinion that if the abscess recurs frequently, as it is occasionally apt to do, care should be taken to examine thoroughly into the condition of the tooth, and, as regards treatment, to give vent to matter as early as possible. How far simple inflammation of a healthy tooth, or a defective or carious condition, gives rise to such an abscess, we need not now stop to inquire. The more formidable and deep-seated abscess, originating in the alveolar cavity—most often at the extremity of a fang—and which makes its way through the alveolar process, and as a rule outwards,—true alveolar abscess, which constantly demands the aid of the surgeon,—is the chief subject I wish to draw attention to.

The cause and the mode of origin of alveolar abscess have been well and fully considered by those who have already written on diseases of the teeth. I think, however, it is desirable to refer shortly to some of these observations. Hunter,* in reference to this, says:—“Sometimes deeper abscesses occur than those commonly called *gumbiles*. They are often of very serious consequences, producing carious bone. They commonly arise from disease in the tooth, and more especially in the cuspidati; these teeth passing further into the jaw than the others. Their depth in the jaw being beyond the attachment of the lip to the gum, if an abscess forms at their points, it more readily makes its way through the common integuments of the face than between the gum and lips, which disfigures the face; and when in the lower jaw, looks like the evil. In the upper jaw it makes a disagreeable scar on the face, about half an inch from the nose. These, although they may sometimes arise from diseases of the teeth and gums, yet are properly the object of common surgery, and the surgeon must apply to the dentist if his assistance be necessary to pull out

* ‘The Natural History of the Human Teeth,’ p. 171.

the tooth, or to perform any other operation which comes under his province."

Fox* says :—"Carious teeth frequently become inflamed at the root, and suppuration takes place in the socket, attended with swelling and soreness of the gums. In these cases the same laws are observed for the exit of matter as in abscesses in general; viz., ulceration takes place in some part of its surface, so as to make an outlet for the matter in the best possible situation. When matter forms at the root of a tooth, the periosteum which covers its fang thickens, and in some cases becomes detached from it; the matter is accumulated as in a bag, by the extension of which considerable pressure is made against the sides of the socket, the consequence of which is, that that part of the alveolar process situated on the outside becomes absorbed, rather than that within the mouth."

Mr. Tomes† says :—"With the formation of pus a process is established for effecting its escape. Either the periosteum becomes detached through the whole length of the fang, and the matter is discharged at the neck of the tooth, or, what is much more common, a hole is formed in the wall of the alveolus, through which the pus gets into the gum. In some few cases, in which the inflammation implicates to a considerable extent the adjoining tissues, the abscess, instead of opening in the gum, extends into the cheek and opens on the surface of the face, and through the opening pus continues to be discharged till the tooth is removed."

Mr. Bell‡ remarks that, "of all the diseases which attack the gums and alveolar processes, none is so common, and, perhaps, few are so frequently misunderstood, as that which is commonly termed '*gum-bile*.' The very name which is popularly given to it is at once a proof of the mistaken notion commonly entertained respecting its nature, and a means of perpetuating the error. The gum is, in fact, only secondarily affected, the cause being invariably seated within the alveolus. I propose, therefore, to call it alveolar abscess, as more correctly designating its true nature and situation. It is produced by various causes. Now and then, though very rarely, it is the result of inflammation of the periosteum of the sound tooth, from cold or some other local cause; or it may arise from mechanical injury to a tooth, as its being loosened or partially dislocated by a blow. The irritation of toothache is also a common cause of its occurrence; but by far the most general is the existence of a dead tooth or root, acting as an extraneous body in the socket."

Mr. James Salter says :—"The presence of dentinal caries is its most frequent cause by far, and it may or may not be preceded or accompanied by toothache."

Whether any other causes than caries of a tooth be productive of alveolar abscess I cannot say; but as far as an experience now extending over some years enables me to express an opinion, I can say truly of the many instances which have come to my notice, I have never seen one in which a defective or a carious tooth was not the cause of the mischief. The results of these abscesses are so various, their treatment

* 'The Natural History and Diseases of the Human Teeth,' p. 69.

† 'Dental Physiology and Surgery,' p. 279.

‡ 'The Anatomy, Physiology, and Diseases of the Teeth,' p. 217.

is so often misunderstood by medical men, their complications and consequences are often so serious, and so constantly call for the interference of the surgeon, that I propose to relate my experience of some of these results.

From all I have observed, it seems to be by no means an uncommon circumstance that a patient should suffer no inconvenience from the presence of a decayed tooth, the cause of an ovoid abscess, until some external swelling or disfigurement, or disagreeable discharge from the nose takes place; and not till then does the patient have recourse to medical advice. It is this absence of toothache, I think, which leads so frequently to the true cause of alveolar abscess, with its consequences, being overlooked. That the formation of the abscess is often almost painless and quite free from toothache I have seen exemplified in several cases. It has often happened to me to observe that when abscess has made its way externally, pain in the affected tooth is the last thing the patient would acknowledge; nor until the appearance of the swelling has the patient been aware of anything wrong. I conclude that in such cases, the progress of the abscess has generally been very slow; or, perhaps, some partial outlet to the matter has occurred through the decayed tooth, or that the perforation of the outer plate of the alveolus has occurred so early as to have allowed freedom to the pus, and that the patient has probably forgotten the pain he at first suffered, from its having been but slight.

Matter having once passed through the outer plate, may make its way in various directions, dependent somewhat on the position of the decayed tooth and its various surroundings.

I believe the rule holds good that all serious or important results are due to the abscess opening outwards, or upwards when in the upper jaw, the most common course; when it opens inwards it is, as far as I have observed, superficial and readily heals.

If the abscess has been allowed to open externally, or has been opened by the medical attendant, when pointing in any part externally, and the offending tooth be not removed, the abscess soon contracts, but a sinus remains. The orifice of the sinus contracts, but becomes prominent, while the surrounding tissues become thickened and hardened. So that we observe in such cases a small elevated mass of infiltrated tissue, in the centre of which is often a nipple-like point of granulation, through which a fine probe may be passed deep down towards the surface and base of the alveolar process. If the thickened patch be taken between the fingers and attempted to be moved over the jaw, it will be found more or less adherent to the latter, often tied by a kind of string-like process to that part of the jaw in which the diseased tooth lies.

A lady was recommended to consult me by my friend Dr. Abercrombie, of Cheltenham. She had for two years suffered from an ulcer on the right side of her face, midway and a little posterior to a line drawn from the angle of the mouth to the base of the jaw. For its relief various local measures and much constitutional treatment had been ineffectually resorted to. Suspecting the cause of the ulcer, I examined the mouth, and found a decayed stump in the lower jaw corresponding to the situation of the ulcer. As soon as I alluded to the state of the tooth as its cause, the patient at once expressed her doubts on the point, as she stated she had never suffered from toothache. I, however,

strongly recommended the removal of the tooth, as it offered the only chance for the ulcer to heal. I heard nothing more of my patient for some weeks, when she called to thank me for my advice. She applied to Mr. Rogers after she first saw me, and as he entirely confirmed my view of the case, the tooth was removed by him. The ulcer soon healed, but there remained a scar, which time alone could soften, but would never entirely remove.

In another case, after much or little pain about a tooth, a patient will complain of offensive discharge from the nose; and it is usually some assistance to the surgeon to note that this discharge is most distinctly referred to one nostril by the patient.

A gentleman consulted me a few years ago who had been for some two or three years a sufferer from constant offensive discharge from his right nostril. His health was good, his habits temperate, his residence the country; nor was there any suspicion of syphilis or scrofula. There was a constant disagreeable discharge from the right nostril. When lying down he was conscious of its trickling down the pharynx. He had been under much local and general treatment, with no apparent benefit. After careful examination of the nostril, which gave no evidence of disease, I examined his mouth. I could not detect anything like a carious tooth, but one—the first molar—looked a little more discoloured than the rest. I tapped it sharply with the steel handle of a small instrument. This immediately made the patient wince. The tooth was unnaturally tender, and by my advice it was removed. A few days after he called to report improvement. The tooth produced was dark-coloured, with its fangs inflamed. At the end of six weeks he had lost all sense of the discharge from the nostril, and when I saw him some time subsequently he had quite recovered from this very disagreeable condition.

I could record other cases of abscess in the antrum, the result of decayed teeth; but this one case is sufficient to illustrate my statement, that much discomfort may occur with a defective tooth without the patient being cognisant of toothache.

The cases related may be considered comparatively simple in their results; but the effects of alveolar abscess are not always so. The following cases will prove my statement. A man was admitted into St. George's Hospital, under my care, with a large brawny swelling on the right side of his neck, extending from the surface of the jaw to the clavicle. It had encroached so much on the median line in front that the larynx was much pushed to the left side, and this produced a good deal of difficulty in breathing. He could not open his mouth to allow a proper examination of the teeth; but I suspected a bad tooth to be the cause of the mischief. Two incisions were made into the inflamed tissues with some relief. The following day there was more difficulty in breathing, and it was necessary to open the trachea to save life. The operation was rendered somewhat difficult by the displacement of the larynx. The swelling now began to subside, as there was free discharge from the wounds; and as soon as the mouth could be sufficiently opened, Mr. Vasey removed a decayed molar from the lower jaw, evidently the cause of all this mischief. The patient left the hospital quite well. But a short time ago I had to see a lady late one evening with a large hard swelling between the chin and thyroid cartilage. She had some difficulty in breathing, and considerable diffi-

culty in swallowing. A free incision in the median line allowed the escape of some very offensive pus, with great relief to her symptoms. I now examined her teeth; one lower incisor was painful on being tapped, and she consented to have it removed as soon as the swelling caused by the abscess had subsided. On removal, the extremity of the fang was found to be carious. After this she remained well for more than a year, when she again sent for me, with another abscess in the same situation. After the abscess was opened, the left middle incisor, which was tender on being tapped, was also removed; and she remained well when last seen, some time subsequently.

Hunter, with his careful observation, has remarked that when abscess occurs in the lower jaw, it often "looks like the evil;" a condition to which, I conclude, we should apply the term "scrofulous" in these days. A swell-marked and interesting case illustrative of Hunter's observation came under my notice at St. George's Hospital some few years ago. A comparatively healthy young woman was sent to me for a terribly bad ulcerated neck. From the base of the jaw, on the right side, to near the clavicle, was a mass of indurated, dark-coloured, and thickened skin and cellular tissue, with numerous ulcerated openings on the surface. To a less extent the left side of the neck was similarly affected. I was asked to recommend her for a bed at the Margate Infirmary, as it was supposed she was suffering from scrofulous ulceration of the neck. I may state that the parts were so much indurated, ulcerated, and so dark-red in colour, that the general appearance was much more characteristic of the brawny condition of cancerous infiltration with ulceration than anything of a scrofulous nature. I was not, however, satisfied as to the character of this mischief, and made an examination of her mouth. On both sides of the lower jaw were numerous decayed stumps. I suggested their removal, and she was handed over to the dresser of the week to be relieved of these stumps. To my great satisfaction, in the space of a short time, with very simple local applications, all the ulcers healed, and the integuments of the neck assumed a natural healthy condition. About a year or eighteen months after this she again applied to me for some recurrence of ulceration on the left side of the neck. I looked in the mouth and saw two stumps remaining in the left lower jaw. I taxed her with not having carried out the instructions I formerly gave—viz., to have all the stumps removed; upon which she replied, that she had had so many removed on that occasion, and as she had suffered a great deal of pain, she thought it would do no harm to allow these two to remain. She at once had them removed, and her recovery was as rapid as it was satisfactory. Mr. James Salter relates a somewhat similar case, and quotes another recorded by M. Robert,* in which suppuration extended to the shoulder and upper part of the breast, followed by death; and in which "it was shown that the suppuration had originated at the angle of the jaw immediately in contact with the decayed wisdom tooth."

There are conditions, however, which, stopping short of the formation of matter, may prove formidable enough, which equally require the surgeon's careful attention and the early removal of the offending tooth.

* 'Conférences de Clinique Chirurgicale,' p. 145.

Two cases of a most interesting character will illustrate my statement.

Some few years ago I was asked to see a patient suffering severely from supposed disease of the right eye. He was suffering excessive pain. The right eyeball was so much protruded that the lids could not close over it, and in consequence of the exposure the cornea was becoming hazy and opaque. The eyeball itself was not very vascular, the pupil was widely dilated, and sense of vision entirely gone. I could not detect any disease in the eye itself to account for this protrusion. I carefully examined the orbit, but could not satisfy myself of the presence of any growth, nor could I feel anything like fluctuation from cyst or abscess. It occurred to me that some extraneous mischief might possibly account for the protrusion, as there was nothing in the condition of the globe or the orbit to explain it, the dilatation of pupil and loss of sight being probably due to the mechanical pressure on the eyeball and the stretching of the optic nerve. I made a careful examination of the bones surrounding the orbit, with a view to ascertain if any ossific implication might explain these conditions. On passing my finger down the side of the nose, the patient winced when it reached a point midway between the inner canthus and angle of the mouth. I immediately suspected a tooth might account for this, and on examination of the mouth found a stump in the upper jaw on the right side, and a molar next it which had been stopped. He made no complaint of toothache. It appeared to me almost too hopeful to expect that these defective teeth could possibly be the cause of such serious mischief; but as an operation had been suggested for the condition of the eye, it was agreed that these teeth should be first removed before any other operative measures were had recourse to. The following day Mr. Vasey removed both stump and stopped tooth. The fangs were inflamed and thickened, but there did not appear to be sufficient to account for such an amount of mischief.

The result was most satisfactory; pain immediately commenced to subside and the protrusion to diminish. At the end of a week the patient was able to close the lids over the cornea, and the latter entirely recovered its natural lustre. At the end of a fortnight it was difficult to say that there had been anything the matter with the eye, except that the pupil was still somewhat dilated, and insensible to the stimulus of light. Subsequently, though vision was not restored, the pupil acted properly in accord with that of the sound eye.

Some two years subsequently to this attack the patient called on me, and stated that he had pain at the back of the left orbit—the opposite side, and as he was about to be absent from England for some time, he wished my advice on this point. He now mentioned to me that some time prior to the attack in the right eye he had distinct recollection of pains at the back of the right orbit, but that, as they were not very severe or persistent, he paid no further attention to them. On looking into his mouth, a decayed molar was seen in the upper jaw on the left side. This was removed with perfect relief to the orbital pain, and the patient has had no further trouble in this respect. Mr. James Salter has published a very interesting case of amaurosis, consequent on acute abscess of the antrum, produced by a decayed tooth, in a communica-

tion to the Medico-Chirurgical Society,* in which he did me the honour to refer to the case just related.

Another case, but less serious in its consequences, occurred to me three years ago. A lady residing in the South of France became subject to acute neuralgic pains about the right orbit and side of the head. This was gradually followed by some general thickening of the soft tissues below and around the inner margin of the right orbit, and gradually spreading outwards. There was also decided prominence of the globe when I saw her, a few months after the commencement of these symptoms, some slight double vision at times, and much headache. I could observe nothing in the condition of the eye, or the contents of the orbit, to account for the slight prominence of the former beyond the general vascularity and the chronic thickening of the soft tissues, with slight periossial enlargement of the inner halves of the margins of the orbit. On examining the teeth, a molar in the right upper jaw was seen to be defective and discoloured, and in front was a stopped bicuspid. By my advice the molar was removed by Mr. Normansell, who then recollected that he had drilled the body of this tooth some time previously; the aperture was still patent, and the tooth appeared defective and discoloured.

The result, though partially beneficial, was not entirely satisfactory; the patient still complained of some pain, and suggested the removal of the stopping from the other tooth, as she thought it rather sensitive. This was done, and now steady gradual improvement took place, and the patient has remained well since, with perfect recovery of vision.

A dentigerous cyst will occasionally be the seat of suppuration. A patient was admitted into St. George's Hospital under my care a few months ago, with an enlargement of the lower jaw on the right side, which, on examination, appeared to involve the substance of the bone. All the teeth (the three molars) over it had been removed previously to admission. On examination of the mouth, a small orifice, from which pus exuded, was observed in front, between the cheek and the gum, and in the floor of the sulcus; a probe passed readily into a large cavity, but no bone or exposed tooth could be felt. The sac was freely laid open inside the cheek; the finger was passed into the cavity, which was felt to be lined by a smooth membrane, but no exposed bone or foreign substance could be felt. The cavity was dressed in with lint dipped in a strong solution of sulphate of copper. It rapidly diminished in size, and was gradually filling up when the patient returned home.

The cases related are of sufficient importance, I trust, to justify the time taken up by their description; and, I think, indicate fairly the very great necessity of attention being early given to the state of the mouth in all cases of ulcers, sinuses, or swellings in the neighbourhood of the jaws. I would almost go the length to say that very few are the ulcers in this situation which have an independent origin; but that they are, in the greater majority of cases, due to defective teeth and subsequent alveolar suppuration.

As to treatment I have but a few words to say, and it agrees entirely with the advice given by Hunter, Fox, Bell, Tomes, and Salter. The rule is as simple as it is certain in its effects; the tooth or stump

* 'Med. Chir. Trans.,' vol. xlv. p. 355.

must be at once removed. In many cases I have seen the removal of the tooth sufficient to evacuate the matter locked up, and would recommend this to be done always in the first instance if possible. When, however, this operation does not effect the purpose, and the abscess has not made for itself any other outlet, it should be at once freely incised within the mouth.

The removal of the tooth will not, however, always prevent an abscess, once started, from becoming troublesome subsequently. In a case in which I was lately consulted, the offending tooth had already been removed—a molar from the right side of the lower jaw. But much induration remained about the outer surface of the bone. The patient was a young lady in rather delicate health; and though a free incision was made between the cheek and the jaw, matter continued to collect, and ultimately presented externally, and was obliged to be let out by means of a small external puncture. This soon closed, and the patient experienced no further annoyance. When a sinus has long been permitted to exist without the extraction of the tooth it is very apt to continue to discharge long after the removal of the offending tooth. It becomes lined by a semi-cuticular membrane, and if fluid be injected, it will run into the mouth. Mr. Bell has recorded an interesting case of this kind, and I have quite lately seen one in which the patient used cotton-wool to plug the orifice. In such cases it is best at once to freshen the edges of the puckered opening and bring them together by fine silver sutures, an operation usually followed by direct and permanent closure of the sinus.

I have met with a few cases in young persons in which a cyst has formed at the bottom of a defective tooth, and which, on being laid open, has disclosed the apex of the fang projecting into the cavity. On the removal of the tooth, this point has been found carious. The cyst has always contracted and filled up after the removal of the tooth.

I look upon these cysts as differing in character from those known as dentigerous cysts, and as dependent on a necrosed condition of the fang. *Tic-douloureux*, or neuralgia, is, I believe, frequently to be attributed to the presence of decayed teeth, and such instances go to prove how indefinite in position and intensity are the pains dependent on such causes.

In conclusion, I would only add that the cases which have been related teach us this lesson—that in all instances of abscess or ulcer in the upper or lower maxillary regions, in certain cases of discharge from the nostrils, or in pains about the orbits, with defective teeth in the jaws, it is always best at once to have recourse to their removal; acting on the simple principle that it is best to clear away any doubtful point in the treatment of a case before recourse is had to any other measures; for the maxim of “an empty house is better than a bad tenant” applies equally to surgery as to commerce.

The Dental Exhibit at the Centennial.

The great Industrial Exhibition, now open at Philadelphia, afford a wonderful display of the proficiency of different nations in the arts and sciences. It is bewildering

from its vastness, and the visitor becomes weary of sight-seeing, and returns to his home, often without a passing glance at even half the wonders and beauties waiting for his inspection. The exhibition there made of the art of dentistry affords, to those interested in it, an instructive token of its progress and present status, and it is scarcely credible that so short a time as fifty years has been sufficient to raise it from being in great part the business of vagabonds and itinerants, to the proud position it now occupies.

A mention of the names of exhibitors and a short description of their displays may not prove uninteresting to those of the profession who find themselves unable to attend the Exhibition in person. It is needless to say that in this branch, more perhaps than in any other, the United States of America overshadows all other nations. The exhibit would be meagre indeed if contributions from our country were removed.

The largest and most complete display made by any manufacturer of dental material, is that of Samuel S. White, of Philadelphia, whose exhibition includes, in addition to a full assortment of teeth, gold foil and the usual instruments, several novelties; among which the new S. S. White chair and engine occupy a prominent position, the latter being also shown as driven by a water motor, and by electricity. In a word, there is scarcely anything which can be named as included in a dental outfit which cannot be found in his collection.

Messrs. Codman and Shurtleff, of Boston, Mass., who are large manufacturers both of surgical and dental instruments and appliances, have a truly valuable and fine-looking display of their specialties. Their stock of forceps, excavators and pluggers have an excellent finish, and are well worthy of more than a passing glance. They show floss silk holders and foil carriers of their design, struck up from thin steel, very light but sufficiently strong for use; mouth mirrors, inhalers for nitrous oxide, ether and chloroform, chairs, brackets, and spittoons, and a very neat and compact form of operating case. The reputation of this firm stands deservedly high for the excellence of their manufactures. Their exhibit is in charge of an attendant, who is always ready to allow, to those who wish, a close examination of the contents of the case.

H. D. Justi, of Philadelphia, has an elegant case, present-

ing a full assortment of teeth of his manufacture and the materials of which they are composed. The mode of arrangement of the teeth in the cases is very striking, and displays them to great advantage. Several new moulds are to be noticed among the number, betokening the efforts constantly put forth by this gentleman to excel in this department.

Messrs. Johnson and Lund, of Philadelphia, have two cases in which they show artificial teeth, corundum wheels, gold foil, tooth powder, amalgam, and dental instruments.

Gold is usually a very attractive metal to any of the human race, whether belonging to the dental profession or not, and it is unusually attractive in appearance in the case which contains samples of the manufactures of Wm. Vallean, Jr., and George J. Pack, of New York city. Gold and silver leaf, and the various preparations of gold which they furnish for dental use are shown, arranged with great taste, and displaying some unique effects. A miniature log cabin made of gold cylinders, and a statuette formed of Pack's pellets, deserve special mention. We are unable to say whether the statuette in question is intended as an effigy of the manufacturer of the material of which it is composed, or of the late G. Washington, Esq. It resembles either in some respects.

Messrs. Charles Abbey and Son, of Philadelphia, exhibit a case of gold foil, and the medals they have obtained at different fairs in which they have taken a part.

D. W. Neal, of Camden, N. J., shows a case of artificial teeth.

Dr. W. G. A. Bonwill, of Philadelphia, has on exhibition his electro-magnetic plugger for filling teeth, an instrument which is attracting considerable notice, and has some very warm advocates. He has previously been awarded the Cresson gold medal, a prize given only for inventions or discoveries deemed of especial merit, which has been awarded but six times in twenty-nine years.

Horatio G. Kern, of Philadelphia, exhibits a case containing a full line of forceps and instruments of his manufacture.

Dr. S. Wardle has on exhibition some very fine specimens of carved block-work, which are well worthy of attention, under a sign bearing the inscription "Not attempted a hundred years ago."

Dr. Thomas Wardle, of Philadelphia, presents a case containing a number of models illustrative of the resources of the dentist in the correction of irregularities of the teeth. There are some very fine studies among the cases presented.

Probably the best opportunity of contrasting the past and the present of dental science is afforded in the case of Dr. John Allen, of New York. An upper and lower set of teeth once worn by General Washington, contributed by the Baltimore College of Dental Surgery, and a lower set also worn by the General, contributed by Mr. Isaac Greenwood, of New York, and a set said to have been worn by Aaron Burr, can there be contrasted with the doctor's latest achievements in continuous gum work. The contrast is very interesting and instructive.

Dr. E. Parmly Brown, of New York, the inventor of the depressed rubber dam, exhibits, in addition to that article, three cabinets of his own design, some fine specimens of gold fillings, and some other articles which we believe were invented by the doctor, which are well worthy of a more extended notice than our space will allow.

Dr. Quincy A. Scott, of Pittsburg, Penn., shows his atmospheric discs for retaining plates in the mouth.

Dr. Thomas B. Gunning, of New York, has an assortment of appliances for reducing fractures of the jaw, correcting irregularities, &c.

Dr. Charles A. White, of Philadelphia, has a celluloid apparatus of his own design, flasks, &c., on exhibition.

Dr. Volney Smith, Newark, N. J., exhibits in the English department whole and partial sets of teeth mounted on the Coralline base.

Italy is represented by "Leopoldo Gramignana, Chirurgico Dentista," with a small case of artificial dentures.

Dr. Noel Winderling, of Milan, presents a very fine Dental Museum, containing models illustrative of the development of the teeth, the diseases of the teeth and jaws, cleft palate, &c.

The object of the collection is to present at one view the whole history of the teeth and their adjacent parts, whether in a physiological or pathological state. The material here brought together could scarcely have been found without great labour and persistence, and the case would be a valuable acquisition to a dental school.

In the Buenos Ayres department may be found a case containing artificial teeth, mounted by "Dr. Rodolfo Newbery, Dentista Americano."

Dr. F. A. Berghamer, of Vienna, Austria, presents a case similar to the above.

In the Russian department are three small exhibits by different dentists.

All the foregoing exhibits are to be found in the main building, but scattered through the departments belonging to the different nationalities to which they belong. There are two other cases, which will be found in the Woman's Pavilion, their contents being the handiwork of lady dentists.

Mrs. Dr. F. C. Treadwell, of Philadelphia, has a case containing specimens of gold and other fillings. We understand she has been in practice since 1854.

Annie D. Ramborger, D.D.S., a regular graduate of dentistry, exhibits specimens of gold fillings and gold-plate work.

It will be seen from the foregoing *résumé* that the dental exhibit, taken as a whole, is an interesting one, when we take into account the fact of the great reluctance to figuring in exhibitions of this sort which exists with many, indeed a majority of the more intelligent among the profession. A fuller representation of manufactures from foreign parts would have greatly enhanced its value, affording as it would opportunity for comparison with our home productions. As it is, however, not a single foreign manufacturer of dental goods has ventured to put his wares in competition with those furnished by this country.—*Dental Advertiser*.

Dental Legislation.

(Concluded from page 281.)

GEORGIA.

Legislation in this State is of the prohibitory character. The following is a transcript of the law approved August 24th, 1872 :—

"*An Act to Regulate the Practice of Dentistry, and to Protect the People against Empiricism in relation thereto, in the State of Georgia.*

"Section 1. Be it enacted by the General Assembly, that

from and after the passage of this Act it shall be unlawful for any person to engage in the practice of dentistry in the State of Georgia unless said person has graduated and received a diploma from the Faculty of a Dental College, chartered under the authority of some one of the United States or foreign governments, or shall have obtained a licence from a Board of Dentists, duly authorised and appointed by this Act to issue such licence.

" *Section 2.* That the Board of Examiners shall consist of five (5) dental graduates or practitioners of dentistry, who are members in good standing of the Georgia State Dental Society; provided that said graduates or practitioners have been practising in the State of Georgia for a term not less than three (3) years. Said Board shall be elected to serve for two years. The president of said Georgia State Dental Society shall have power to fill all vacancies in said Board for unexpired terms.

" *Section 3.* That it shall be the duty of this Board, first, to meet annually at the time of meeting of the Georgia State Dental Society, or oftener, at the call of any three of the members of said Board. Thirty days' notice must be given of the annual meetings. Secondly, to prescribe a course of reading for those who study dentistry under private instruction. Thirdly, to grant a licence to any applicant who shall furnish satisfactory evidence of having graduated and received a diploma from any incorporated Dental College, without fee, charge, or examination. Fourthly, to grant licences to all other applicants who undergo a satisfactory examination. Fifthly, to keep a book, in which shall be registered the names of all persons licensed to practise dentistry in the State of Georgia.

" *Section 4.* That the book so kept shall be a book of record; and a transcript from it, certified to by the officer who has it in keeping, with the common seal, shall be evidence in any Court in the State.

" *Section 5.* That three members of said Board shall constitute a quorum for the transaction of business, and should a quorum not be present on the day appointed for their meeting, those present may adjourn from day to day until a quorum is present.

" *Section 6.* That one member of said Board may grant a licence to an applicant to practise until the next regular meeting of the Board, when he shall report the fact, at

which time the temporary licence shall expire; but such temporary licences shall not be granted by a member of the Board after the Board has rejected the applicant.

"Section 7. That any person who shall, in violation of this Act, practise dentistry in the State of Georgia for a fee or reward, shall be liable to indictment, and, on conviction, shall be fined not less than fifty, or more than three hundred dollars; provided that nothing in this Act shall be construed to prevent any person from extracting teeth; and provided, further, that none of the provisions of this Act shall apply to regular licensed physicians and surgeons.

"Section 8. That on trial of such indictment, it shall be incumbent on the defendant to show that he has authority under the law to practise dentistry, to exempt himself from such penalty.

"Section 9. That one-half of all fines collected shall inure to the informer, and the other half to the educational fund of the county.

"Section 10. That all dentists who have been in practice prior to the passage of this Act are exempt from all provisions of the same.

"Section 11. Repeals conflicting laws."

We have no means of accurately estimating the value of this law in its results. It appears, however, to be very loosely framed.

NEW JERSEY.

The laws of this State and Georgia are almost exactly similar, as will be seen by the following:—

"An Act to Regulate the Practice of Dentistry, and to Protect the People against Empiricism in relation thereto, in the State of New Jersey."

"1. Be it enacted by the Senate and General Assembly of the State of New Jersey, That from and after the passage of this Act it shall be unlawful for any person to engage in the practice of dentistry in the State of New Jersey, unless said person has graduated and received a diploma from the Faculty of a Dental College, chartered under the authority of some one of the United States or foreign governments, or shall have obtained a certificate from a Board of Dentists duly authorised and appointed by this Act to issue such certificates,

"2. And be it enacted, That the Board of Examiners shall consist of five practitioners of dentistry, who are members in good standing of the New Jersey State Dental Society, provided that said practitioners have been practising in the State of New Jersey for a term of not less than three years; said Board shall be elected by the New Jersey State Dental Society, to serve for one year; the president of said New Jersey State Dental Society shall have power to fill all vacancies in said Board for unexpired terms.

"3. And be it enacted, That it shall be the duty of this Board, first, to meet annually, at the time of meeting of the New Jersey State Dental Society, or oftener, at the call of any three of the members of said Board; thirty days' notice must be given of the annual meetings. Secondly, to prescribe a course of reading for those who study dentistry under private instruction. Thirdly, to grant a certificate to all applicants who undergo a satisfactory examination. Fourthly, to keep a book in which shall be registered the names of all persons having certificates to practise dentistry in the State of New Jersey after the passage of this Act.

"4. And be it enacted, That the book so kept shall be a book of record, and a transcript from it, certified to by the officer who has it in keeping, with the common seal, shall be evidence in any Court in the State.

"5. And be it enacted, That three members of said Board shall constitute a quorum for the transaction of business, and should a quorum not be present on the day appointed for their meeting, those present may adjourn from day to day until a quorum is present.

"6. And be it enacted, That any person who shall, in violation of this Act, practise dentistry in the State of New Jersey for a fee or reward shall be liable to indictment, and, on conviction, shall be fined not less than fifty, or more than three hundred dollars; provided that nothing in this Act shall be construed to prevent any person from extracting teeth; and provided further that none of the provisions of this Act shall apply to regular licensed physicians and surgeons.

"7. And be it enacted, That on trial of such indictment it shall be incumbent on the defendant to show that he has authority under the law to practise dentistry, to exempt himself from such penalty.

"8. And be it enacted, That one-half of all fines collected shall inure to the informer, and the other half to the educational fund of the county.

"9. And be it enacted, That nothing in this Act shall apply to persons who shall be engaged in the practice of dentistry in this State at the time of the passage of this Act.

"10. And be it enacted, That to provide a fund to carry out the provisions of the third section of this Act, it shall be the duty of the Board of Examiners to collect from all who received the certificate to practise dentistry the sum of thirty dollars each, of which sum, if there be any remaining after liquidating necessary expenses, the balance shall be paid into the treasury of the said New Jersey State Dental Society, to be kept as a fund for the more perfect carrying out of the provisions of this Act; and the Board of Examiners, for their remuneration, shall receive from the above fund ten dollars per day for each day of actual service.

"11. And be it enacted, That this Act shall take effect immediately.

"Approved, March 14th, 1873."

This law is said to have had a very beneficial effect in New Jersey.

PENNSYLVANIA.

About the year 1865 the profession in this State began seriously to agitate the subject of dental legislation. The same causes noted as operating to this end in New York were here of equal force and effect. Authoritative organisation was felt to have become a necessity; and the formation of a State Society upon a legal status, and with legislative guardianship, was strenuously advocated. In 1867 the Lake Erie Dental Association had a Bill presented, but it was not pushed to a passage. In December, 1868, the State Dental Society was formed, and its first act was to draft a Bill to be presented to the Legislature.

But there seems to have been insurmountable difficulties to its success, for neither at the next nor at subsequent meetings of the Legislature was the measure adopted; and it was not until April 17th, 1876, that a dental enactment finally became a part of the law of this State. The following is the Act as passed:—

"An Act to Regulate the Practice of Dentistry, and to Protect the People against Empiricism in relation thereto, in the State of Pennsylvania, and providing penalties for the violation of the same.

"Section 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania, in General Assembly met, and it is hereby enacted by the authority of the same, That from and after the passage of this Act it shall be unlawful for any person, except regularly-authorized physicians and surgeons, to engage in the practice of dentistry in the State of Pennsylvania unless said person has graduated and received a diploma from the Faculty of a reputable institution where this specialty is taught, and chartered under the authority of some one of the United States, or of a foreign government, acknowledged as such, or shall have obtained a certificate from a Board of Examiners, duly appointed and authorized by the provisions of this Act to issue such certificate.

"Section 2. That the Board of Examiners shall consist of six practitioners of dentistry, who are of acknowledged ability in the profession. Said Board shall be elected by the Pennsylvania State Dental Society at their next annual meeting, as follows :—Two shall be elected for one year, two for two years, and two for three years, and each year thereafter two shall be elected to serve for three years, or until their successors are elected. The said Board shall have power to fill all vacancies for unexpired terms, and they shall be responsible to said State Dental Society for their acts.

"Section 3. That it shall be the duty of this Board :—

"First. To meet annually, at the time and place of meeting of the Pennsylvania State Dental Society, and at such other time and place as the said Board shall agree upon, to conduct the examination of applicants. They shall also meet for the same purpose at the call of any four members of said Board at such time and place as may be designated. Thirty days' notice must be given of the meetings by advertising in at least three periodicals, one of them being a dental journal, and all published within this State.

"Second. To grant a certificate of ability to practise dentistry, which shall be signed by said Board and stamped with a suitable seal, to all applicants who undergo a satis-

factory examination, and who receive at least four affirmative votes.

"Third. To keep a book in which shall be registered the names and qualifications of such, as far as practicable, of all persons who have been granted certificates of ability to practise dentistry under the provisions of this Act. .

"*Section 4.* That the book so kept shall be a book of record ; and a transcript from it, certified to by the officer who has it in keeping, with the seal of said Board of Examiners, shall be evidence in any Court in this State.

"*Section 5.* That four members of this Board shall constitute a quorum for the transaction of business, and should a quorum not be present on any day appointed for their meeting, those present may adjourn from day to day until a quorum is present.

"*Section 6.* That any person who shall, in violation of this Act, practise dentistry in the State of Pennsylvania, shall be liable to indictment in the Court of Quarter Sessions of the proper county, and, on conviction, shall be fined not less than fifty, or more than two hundred dollars ; provided that any person so convicted shall not be entitled to any fee for services rendered, and if a fee shall have been paid, the patient, or his or her heirs may recover the same as debts of like amount are now recoverable by law.

"*Section 7.* That all fines collected shall inure to the poor fund of the county in which the prosecution occurs.

"*Section 8.* That nothing in this Act shall apply to persons who shall have been engaged in the continuous practice of dentistry in this State for three years or over, at the time of or prior to the passage of this Act.

"*Section 9.* That to provide a fund to carry out the provisions of the third section of this Act, it shall be the duty of the said Board of Examiners to collect from those who receive the certificate to practise dentistry the sum of thirty dollars each, of which sum, if there be any remaining after liquidating necessary expenses, the balance shall be paid into the treasury of the said Pennsylvania State Dental Society, to be kept as a fund for the more perfect carrying out of the provisions of this Act."

Odontological Society of Great Britain.

Ordinary monthly meeting, held on the 4th inst., at the Dental Hospital, Leicester-square, Charles Vasey, Esq., president, in the Chair.

At the commencement of the proceedings, Mr. Hatfield and Mr. Reboul were appointed to audit the Society's accounts for the year.

Mr. MOON stated that during the discussion following Mr. Pollock's paper at the last meeting, he had unwittingly misrepresented the views of a distinguished authority on Dental Pathology. He was then under the impression that Mr. Salter considered that diseased action external to a tooth did not follow the fatty degeneration shown in the pulp when devitalized in an unopened chamber. Reference to the chapter on "Necrosis" in Mr. Salter's last published work showed that that was a complete misapprehension of his views, and he expressed his regret for the mis-statement.

CASUAL COMMUNICATIONS.

Mr. THOS. GADDES brought before the notice of the Society a first right upper molar, extracted from a boy at the National Dental Hospital. The crown of the tooth was quadrate and above the average size; the length of the root was not unusual, but the peculiarity consisted in its cup-shaped extremity, the shape of the pulp cavity, and the thinness of the walls. This was the fifth specimen of that kind of malformed tooth that was recorded, and he asked whether it indicated an erratic trace of a form, or resemblance to a form, present or absent in existing or extinct mammals, and now obsolete through modification in man?

Mr. BLAISE exhibited an actual cantery, which by means of a hand bellows could be kept at the required heat for almost any length of time.

The PRESIDENT said this was a very ingenious and safe mode of applying the cautery.

Mr. MOON said he had seen this method of application used in the extirpation of an epulis, and it answered admirably.

Mr. WEISS narrated a case of swallowed artificial teeth that occurred in the practice of Mr. J. Blackstone. A lady, æt. 33, while attempting to take a pill, accidentally swallowed a small gold plate with a mineral block of two teeth.

This was followed by great pain in the region of the cardiac orifice of the stomach, nausea, inability to swallow, and fever. On the ninth day an œsophageal tube was passed down the throat, and it appeared to strike the teeth, and force them through the opening leading into the stomach. Vomiting became persistent, and the patient was greatly emaciated, so that the operation of gastrotomy was seriously entertained, when, happily, on the 117th day after the accident, while the patient was endeavouring again to take a pill, she vomited with more than usual violence, and threw up the teeth. Almost instantaneously she began to recover, and was speedily restored to health. In a second case, the patient had but three teeth remaining in his upper jaw, one central and two lateral incisors, so that the denture was nearly complete, and had been worn for many years; it fitted the mouth fairly, and could not be removed merely by the action of the tongue. He went to bed a little after eleven o'clock on the 30th of July last, having the denture in his mouth, and awoke a few minutes after twelve with a feeling of suffocation. A medical man was sent for, and the symptoms were attributed to a spasm of the glottis, the idea that he had swallowed his teeth not being entertained. The patient would not believe that the teeth were in his throat; but after a fruitless search for them for nearly two hours, Mr. Royes Bell was sent for. Mr. Bell in his report stated that, on passing the finger down the throat, the teeth were felt just beyond the effectual reach of the finger. He then sent for Mr. Roberts, the house-surgeon at King's College Hospital, who came at once, bringing with him suitable instruments. On examination of a duplicate set of teeth they found that the shape of the gold plate helped them very materially in their efforts to extract it, as it was curved at the back part. He passed a pair of œsophageal forceps, and, seizing the posterior margin of the plate, brought it up successfully as far as the soft palate, where it stuck. Then, after giving the patient breathing time, it was removed from behind the soft palate without any further trouble.

The PRESIDENT said it was fortunate for the patient when a case of that kind terminated so favourably. He had mentioned to the Society a case that happened at St. George's Hospital, where a policeman, having fallen off the high pavement in the Brompton-road, was brought in in a

supposed fit ; but on post-mortem it was found that four artificial teeth had been driven down his throat by the fall, had lodged in the œsophagus and caused death.

Mr. HUTCHINSON described the mode he pursued in treating regulation cases, and mentioned one now under treatment in which the first permanent molar and the second bicuspid were capped with vulcanite. A small gold hook was fastened to each side of the capping, and to this a piece of ordinary rubber dam was attached, being fastened to the hooks by a small hole punched in each end of the rubber. It then passed round the front of the teeth, and, to prevent it slipping off, a small hook, bent twice at right angles, was fixed over one of the central incisors, and the slip of rubber passed round it. In this way it was passed round the front of the teeth and exerted a gradual compression on the whole.

Mr. HUNT, having adopted that plan of treatment many times, could quite endorse the statement that it was an exceedingly easy method. There was an advantage both to the operator and to the patient, inasmuch as it was done with very few visits and with very little pain or distress.

Mr. BARRETT said the case related by Mr. Weiss was one of the most remarkable he had ever heard, and hoped gentlemen would favour the Society with their recollection of any similar cases.

Mr. SEWILL said at least six cases of the kind had been recorded in the "Transactions" of other societies during the last five or six years. At the Medical Chirurgical, not many months since, a case was mentioned by Mr. Little in which, at the London Hospital, he removed from a stomach by means of œsophageal forceps, a large piece of work. On one occasion, at the Medical Society, three or four cases of a similar kind were related.

Mr. HUNT said a case occurred in Sir William Fergusson's practice, in which five teeth mounted on a gold plate were lodged at the lower end of the œsophagus and remained there, producing more or less distressing symptoms for a period of six weeks.

Mr. CHARLES TOMES said there was a case on record in the practice of Sir James Paget of a full set of upper teeth lodging in the fauces, and remaining there for some weeks. With reference to the plan of regulating teeth, shown by Mr. Hutchinson, the first person he knew as having used

it was Mr. Palmer, jun., of Cheltenham, who had employed it in a great number of cases with considerable success, and, in one or two small details, had introduced improvements. He also wished to bring to their notice a specimen of an elephant's molar which had been hit by a bullet, and in which, previously to the tooth being sawn in two, the bullet lay loose in a cavity. The great point of interest about it was that it exemplified, on what he might term a gigantic scale, pathological processes constantly occurring in human teeth with inflamed pulps on a microscopical scale.

Mr. OAKLEY-COLES said that in all those cases of irregularity of the character shown by Mr. Hutchinson he strongly objected to the use of india-rubber at all, and the fact of the case having been treated successfully in a short time was strongly against it. In a case of the kind indicated the greater the period over which treatment extended the more likely was the result to be permanent in its character. He used in such cases a platinum capping over the molar tooth, with a hard platinum band passing in front of the incisors, and as the pressure lessened the parent of the child was directed to press the band in a little, so as to keep up a constant pressure on the incisors. They would then get a slow absorption of the bone behind the teeth, and were not liable to the loosening and periostitis, which was likely to occur in cases where remedies acting rapidly were adopted.

Mr. BALKWILL said, according to his experience, the quicker the teeth were moved in these regulation cases the better were the results in all respects. Even if there was some slight inflammation set up it was rather a help than otherwise, and he failed to remember a case in which any ill result followed.

Dr. WALKER then read a paper on "The Devitalisation of the Dental Pulp."

Mr. MOON, in reference to the case mentioned by Mr. Pollock on the last occasion in which there was severe pain in the eyes of a patient, ascribed to inflammation about a molar tooth on which rhizodontrophy had been performed, said that he had since seen a case very nearly corresponding to that mentioned by Mr. Pollock. A student at Guy's, having had severe pain in the back of the eye for five days, came to him asking for the abstraction of a bicuspid on which rhizodontrophy had been performed three years previously, after the extirpation of the pulp. Being rather a

believer in rhizodontrophy, he looked at the adjoining teeth, and found that decay had penetrated the distal surface of the canine in front of the bicuspid, and had reached the pulp chamber. The tooth had an amalgam stopping. This was removed, the pulp chamber opened up, and the remains of a dying pulp extracted, and the unpleasant symptoms immediately ceased.

Mr. HUNT confirmed Dr. Walker's views that where the pulp had been suppurating and the alveolar wall penetrated by abscess, the operator should not be satisfied until he had pumped up sufficient solution of carbolic acid to see it escape externally through the gum. When that was done it was marvellous to see how, even within twenty-four hours, an abscess would subside and leave but a little cicatrix.

Mr. ASHLEY BARRETT said he failed to see the advantage of diluting the arsenic to the extent advised by Dr Walker, when the object was to devitalise the pulp as painlessly and rapidly as possible. He believed that this was best done by using the arsenic in as concentrated a form as possible, and was in the habit of taking two parts of arsenic and one part of soap, mixing them together, and then a piece a little bigger than a pin's head was generally sufficient to destroy the pulp in three or four hours. He did not believe that the local application of morphia in such small quantities could produce much effect.

Mr. HUTCHINSON recommended the application of a very dilute mixture of arsenious acid with an excess of pure carbolic acid applied on a little cotton wool as a most effectual means of subduing sensitive dentine. Carbolic acid was invaluable in the treatment of abscesses at the roots of teeth. It must be pumped through until it appeared through the surface of the gum. The abscess would then be completely cured, and the sinus heal up in a perfectly healthy form.

Mr. BALKWILL said the great difficulty in such cases was to get the acid to pass through the apex of the fang.

Mr. TURNER had tried the levigated arsenic, and found there was greater absence of pain than when the other forms were employed. With regard to the cure of abscesses, the pumping was the difficulty; if they could manage that, it mattered little whether they used creosote and carbolic acid, or carbolic acid and glycerine.

Dr. WALKER, in reply, said he frequently found cases where he could not get the fluid to pass through the sinus

or the alveolar process on the first, second, or third visit, but subsequently it would always pass, and then was the time to cleanse and plug.

The thanks of the Society were accorded to Dr. Walker and the various contributors, and the meeting was adjourned to the 8th of January, 1877.

[Up to time of going to press we have not received copy of Dr Walker's paper. We hope, however, to publish it in our next.]

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—Your suggestions expressed in the leader of this month, that the entire body of Dental Licentiates should form themselves into an association, by means of which they might maintain the sufficiency of their qualifications and promote the unanimity of action, &c., is certainly one that should, in my humble opinion, be carried out as soon as possible, indeed I think urgently required, at this present time. A Society formed of gentlemen thus qualified would, with thorough determination and unity of action, do much good in upholding the status of the profession in the hour of need.

Your obedient servant,

60 Liverpool-road, Nov. 24th, 1876. A. P. REBOUL.

THE ASSOCIATION OF DENTAL SURGEONS.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—*Aprpos* of the latter part of the concluding sentence of your leader in last month's issue, in which you make a valuable suggestion "that the entire body of dental licentiates should form themselves into an association, by means of which they might maintain the sufficiency of their qualification and promote that unanimity of action, and that *esprit de corps* which at the present time seem so sadly lacking," I think it would be highly beneficial to our profession if there were constituted such a society, by which quacks could be prosecuted for *mal praxis* whenever a suitable case should come before its notice, and such are certainly not infrequent.

An association, with this for one of its objects, would represent the qualified and principal element of the dental profession in a manner similar to that in which the Medical Defence Association represents the medical profession. The association consisting only of qualified men would do so, legally and otherwise, better than would such a

transient and mixed body as the Dental Reform Committee, or even, perhaps, than the Odontological Society as now constituted.

It might be urged that the Medical Act does not apply to the Dental profession. Upon this I am not competent to give an opinion, but the best proof would be in trying a case. Should we fail our efforts would not be wasted, for it would not be until we showed the want of, and necessity for, such protection for ourselves and the public that we could expect any legislation.

I need hardly say that by trying a few cases before a Court of law would also be an excellent means of giving the public an opportunity of knowing something of the present position of our profession.

The question is—would it be to the welfare of the Dental profession that its qualified members should be legally distinguished from the advertising quack? The medical profession, the Pharmaceutical Society, and others have found such distinction of great value; then, why should we not? Let such be acknowledged through the medium of our periodicals, and why shrink because a little energy is needed?

There are other desirable objects which the association might seek to obtain, such as registration, compulsory education, &c.

I have for some time entertained the necessity for such an association, as doubtless others also have done, and I think the present time opportune for bringing the matter forward.

Yours, &c.,

THOMAS GADDES.

46 Seymour-street, Portman-square, W.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—You were kind enough to insert in a recent number an appeal on behalf of the eldest son of the late Mr. Wright for votes or interest by which to secure his election to the London Orphan Asylum, for which he is a candidate. Several gentlemen having desired to be reminded of it before the next election, I beg now to recall it to their memory, and also to gratefully acknowledge the sums already received to secure votes. The next election takes place on the 22nd of January, 1877.

The grandfather of the children, Mr. James Wright, was well known to the profession for upwards of forty years; but his decease, and the early death of both parents, have left the children totally unprovided for. Any further assistance, either in votes or otherwise, will be most thankfully received and acknowledged by,

Yours very obediently,

THOS. SEXTON.

DONATIONS ALREADY RECEIVED.

£ s. d.			£ s. d.		
C. Ash and Sons -	2	2	0	— Turner, Esq. -	0 10 6
Edwin Saunders, Esq. -	1	1	0	A. W. Furber, Esq. -	0 10 6
Rev. H. W. Burrows -	1	1	0	Thos. Read, Esq. -	0 10 6
A. Woodhouse, Esq. -	1	1	0	W. Bennett, Esq. -	0 5 0
Smale Bros. -	1	1	0	G. Hockley, Esq. -	0 5 0
Alex. Jameison, Esq. -	1	1	0	G. Rutterford, Esq. -	0 5 0
W. Ash, Esq. (Gt. Marl-				R. B. -	0 2 0
boro'-street) -	1	1	0	Milward Harding	0 5 0
James Stocken, Esq. -	1	1	0	Joseph Rogers -	0 10 0
D. J. Connacher, Esq. -	1	1	0	Wm. Wilmore -	0 2 6
Dr. Hazelton (Dublin) -	1	1	0	M. A. Birt -	0 10 0
W. F. Forsyth, Esq. -	0	10	0	G. Gregson -	0 5 0

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM NOVEMBER 1ST TO NOVEMBER 30TH, 1876.

Extractions.	Children under 14	-	-	-	-	-	389
	Adults	-	-	-	-	-	660
Under Anæsthesia	-	-	-	-	-	-	247
Gold Stoppings	-	-	-	-	-	-	207
White Foil ditto	-	-	-	-	-	-	94
Plastic ditto	-	-	-	-	-	-	265
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	-	30
Miscellaneous Cases	-	-	-	-	-	-	206
Advice Cases	-	-	-	-	-	-	135

Total	-	-	2233
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JAMES MERSON, *Dental House Surgeon.*

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of MESSRS. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE Monthly Review OF DENTAL SURGERY.

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The Rev. Sir EDWARD REPPS JODRELL, Bart.

To Messrs. FELTOE & SONS, 27 ALBEMARLE-STREET, W.

When at Sall I received an Analytical Report of your SPÉCIALITÉ SHERRY, and you must forgive me for saying that at first I regarded the whole matter as a most egregious piece of humbug. Having, however, tasted the wine in question, and found it most agreeable to the palate, I determined, on my own responsibility, to have it analysed for myself, having fully also determined previously to expose any hoax *pro bono publico*, or to give you the benefit of the Analysis should it turn out in your favour. I have the pleasure to forward to you Professor Redwood's (of the Pharmaceutical Society of Great Britain) Analysis, which says more than I can express. I am very particular as to the wine I drink, and as I have been hitherto buying every-day Sherry at 60s. a dozen, I am rejoiced to find now that I can purchase wine of equal strength and superior bouquet at half that price. This should be known to the general public, and you can make any use you deem proper of this letter, and also of Professor Redwood's most elaborate Analysis.

Yours faithfully, (Signed) EDWARD REPPS JODRELL.

THE "SPÉCIALITÉ" SHERRY.

(REGISTERED).

"It has ATTAINED and DESERVES a great MEDICAL REPUTATION."—Medical Record.

"Founded on its FREEDOM FROM ACIDITY AND HEAT."—British Medical Journal.

"To the meal of a patient suffering from DYSPEPSIA it would be VALUABLE."—Medical Times.

"FREE from the ACIDITY commonly found in SHERRY."—Public Health.

"A PALE SHERRY OF LIGHT CHARACTER AS REGARDS THE ALCOHOL."—Medical Press.

"FREE from MINERAL ACID or INORGANIC MATTER not yielded by Grape-Juice."—Professor Redwood, Analyst to the Pharmaceutical Society of Great Britain.

"VALUABLE to INVALIDS and persons who have Gouty or Uric Acid tendencies."—Dr. Hardwicke, Metropolitan Analyst, and Coroner for Central Middlesex.

"The PRODUCE of the GRAPE."—Dr. Hassall, Analyst.

"A REMARKABLE FINE PURE PALE WINE."—The Standard.

"UNADULTERATED GRAPE JUICE."—United Service Gazette.

"THE OLD-FASHIONED NUTTY FLAVOUR."—Court Journal.

"A GENUINE WHOLESOME FLAVOUR."—The Freemason.

"IS SOLD AT A PRICE NOT EXCEEDING THE INJURIOUS COMPOUNDS COMMONLY SOLD FOR SHERRY."—The Rock.

30s. per Doz. £18 per Quarter Cask.—CASH ONLY.—Carriage Paid.

FELTOE AND SONS.

Chief Establishment—27 ALBEMARLE STREET, W.
(Late of CONDUIT STREET.)

City Offices—8 UNION COURT, OLD BROAD STREET,
and 80 BISHOPSGATE STREET, E.C.

Branch Offices—MANCHESTER (110 King Street),
BRIGHTON (57 North Street), and
BRISTOL (34 and 35 Prince Street).

THE MONTHLY REVIEW OF DENTAL SURGERY.

No. VIII.

JANUARY, 1876.

VOL. IV.

The Present Position of the Dental Profession.

An unexpected element of interest has been introduced into the field of dental politics, in consequence of the recent action of the Council of the Royal College of Surgeons.

The collective wisdom of that Institution has suddenly been compelled to recognise the fact that, in accordance with the provisions of their charter, they must, *nolens volens*, admit women to an examination for the licence in midwifery; and, further, that those candidates who obtain this qualification have a perfect and indisputable claim to the registration of their names as legal practitioners in this department of medicine. That this change of front on the part of the College will entirely alter the relative position of the opponents and advocates of female practitioners we may reasonably expect, although, as dental surgeons, we need take no present interest in that aspect of the case.

The standing counsel of the College, having clearly stated that any one holding a licence of midwifery without any other qualification can be placed on the Register, the question that naturally arises is—why cannot dental licentiates, receiving their diploma from the same corporation,

enjoy the same privilege. The answer, of course, will be that the Act of Parliament from which the College receives its power to examine candidates for the dental diploma, does not mention dental licentiates in the schedule of those who shall be entitled to register, while it does mention midwifery licentiates as justified in doing so. However, taking into consideration the curriculum through which the dental student is compelled to pass, and that enforced on the student of midwifery, there seems no valid reason why the dental surgeon should occupy an inferior position as compared with the lady who simply obtains a licence to practice midwifery. A single word added to Schedule A. of the Act of 1858 would place the dental licentiates in the possession of the privilege which they so much desire, and enable them to place their names on the Medical Register, and thus afford a distinguishing mark between the qualified and the unqualified practitioner.

Believing, as we do, that prohibitive legislation cannot be obtained to operate against unqualified practitioners, it seems the more desirable that those who go through the ordeal required by the College of Surgeons should enjoy some privileges and legal rights superior to those who have declined or failed to obtain a recognised diploma.

The Odontological Society, representing as it does the whole of the more influential part of the profession, may fairly be looked to as the fitting body to take up this question. We have no other permanent representative Association, and it behoves the members of the Odontological Society to urge upon the Council the necessity of fulfilling the purposes for which it was founded, and do all in their power "to advance the interests of the dental profession."

Advertising. No. 3.

Continuing our researches among those gentlemen who endeavour by outward acts to thrust themselves upon public notice, we come, this month, to that rather numerous body who, in order to achieve their end, avail themselves of the services of the Fourth Estate of the Realm. Not in leading articles, however, nor in paragraphs of news, or general information, is the Press called into action, but rather in those columns—more accessible, if more costly—devoted to trade announcements at so much a line.

It is really astonishing what a large number of persons are anxious to persuade the public what very able dentists they are. We remember reading a work by a French author upon advertising, in which he says that the first time a man sees an advertisement, he does not notice it at all; the second time he faintly observes it; the third, he thinks he saw it before; the fourth, he reads it through; the fifth, he wonders if there's anything in it; the sixth, he asks how much it costs; the seventh, he says, "Damn it—here's that thing again"; and so on till the twentieth time, when he avails himself of it. Apparently the gentlemen we now refer to entertain much the same opinion, and, by repeating their announcements continually, not only hope to make the public believe them, but also—like elderly gentlemen who tell very improbable stories very frequently—at last believe them themselves.

The newspaper dentists, as we may call this class of advertisers, give themselves various titles and qualifications. Thus, out of six advertisements now before us, there are two "Surgeon Dentists," one "*The Dentist*," one "Member College of Dentists, England," one (a firm) "M.D.," and one "Resident Dentist." None of these individuals, however, appear in the list of holders of dental diplomas in the "Medical Directory," nor can we obtain any information about the "College of Dentists, England," except as a defunct institution. If the British public would look before they leap, would open their eyes before they open their mouths, and would insist upon a more satisfactory qualification than the mere self-made statement of a trade advertisement, it would not only be better for the British public, but also fairer to those dentists who do acquire recognised diplomas. Many of these advertisers, too, hold appointments which we cannot trace—one, to wit, in the

country, announcing himself as "Dentist to the Royal Dispensary, London."

In the matter of style these announcements are well worthy a little study, and we propose to give a few excerpts to show—not only what a power of writing the authors possess (their detractors might call it *cacæthes scribendi*) but what vast fields of operation are open to the practitioner!

Most advertisers are desirous to impress the public with the fact that, by their respective "systems," as they are invariably called, the operation of extraction causes no pain. Thus one heads his announcement "perfectly painless dentistry;" another "can guarantee every case he undertakes without the slightest pain;" while a third says, with admirable candour, "teeth extracted painlessly if desired." The phrase, "painless dentistry," however, occurs in three out of four. Some announce how this absence of pain in the operations is obtained, and appeal to the medical papers for confirmatory opinions. On this point, it would be amusing, if it were not almost aggravating, to note how quietly these individuals, as a rule, appropriate nitrous-oxide gas as an invention of their own. It is invariably announced as "our new system," "my painless method," "by royal letters patent," &c., and the reader of half-a-dozen of these advertisements, if he were not aware of the real facts, would fancy that each of the individuals so eloquently describing the new anæsthetic was in reality one of the greatest benefactors of the age; at all events, an extremely scientific man who ought to obtain the universal support of the large body of sufferers with their teeth, for his great discovery of the qualities of nitrous-oxide gas and other anæsthetics.

Advertisements, as a rule, teem with descriptions of artificial teeth and plates. Thus, while one dentist asserts that his "enamelled teeth (supplied while waiting)," are the best, another declares that his "incorrodible mineral teeth" are unequalled, and a third states that his "adamantine artificial teeth, constructed on the atmospheric system," cannot be surpassed. But, as if these varied and enviable differences of make were not enough—the question of fixing follows, and the patient, who has decided the relative merits of "adamantine," "incorrodible," or "atmospheric," is at his wits' end to decide between "gum-coloured india-rubber suction plates," "pure American gold springs," or "a novel and

hitherto untried system by which they are fixed so firmly to the gums, that when once in the mouth, it is almost impossible to move them." Here we must note that there is at all events one man who works by steam—he announces "teeth supplied by other dentists, repaired in a few hours by steam-power."

As in other methods of advertising, there are degrees of excellence, we think we must give the palm for descriptive powers, to the gentleman who claims for his system—

"Perfectly painless manipulation ; facial anatomy faithfully studied and youthful appearance restored, elegance of appearance and naturalness combined with the utmost strength and durability ; mechanical lightness of the greatest attainable degree ; perfect security in the mouth without spring, wire, or ligature ; mastication and articulation equal to one's own natural teeth, there is no difference whatever,"

though perhaps the operators may be considered dangerous rivals, who, without acknowledging the source from which they obtain the eloquent words, adopt the following from the late Mr. Josiah Wedgwood :—

"All works of taste must bear a price in proportion to the skill, taste, time, expense, and risk, attending their invention and manufacture. Those things called dear, are, when justly estimated, the cheapest : they are attended with much less profit to the artist than those which everybody calls cheap. Beautiful forms and compositions are not made by chance, nor can they ever, in any material, be made at small expense. A competition for cheapness, and not for excellence of workmanship, is the most frequent and certain cause of the rapid decay and entire destruction of arts and manufactures."

while the "dentist" who states that "decaying substances contain animal and vegetable substances which animaculæ our tooth-paste completely destroys," may fairly be called "a good third."

If nothing else would suffice to show the public what class of men they are who thus "assume a virtue if they have it not," we should have thought that the curious mistakes that are made would have opened their eyes. For instance, one firm have been "extracating" teeth for very many years, and this is no "printer's error," for though the other wording of the advertisement is frequently changed, the "extracation," like the brook in the well-known song, "goes on for ever," while another individual, ignoring the use of instruments, announces, "teeth extracted by nitrous-oxide gas." Probably this latter may be effected in the same way as the artificial teeth are made that are constructed on the

"atmospheric" system. One more specimen, and we have done. It should be enough, too, for the public, and should not only convince the wavering, but confirm those who have already made up their minds, not to be charmed by the advertiser. It has the usual heading, "Painless Dentistry," and after sundry other attractions, finishes with "The Dental Profession taught for 25*l*." After this, the announcement of a "good, sound, classical, and commercial education," in a healthy spot, with no extras and no holidays; but with a liberal allowance of pocket-money, for 20*l*. a year, payable quarterly—reads tamely.

The Month.

MR. EDWIN SAUNDERS.

We have much pleasure in publishing at another part of the Review a letter from Mr. Edwin Saunders.

EXTRAX FROM JOSH BILLINGS' "SENTENIAL FARMER'S ALMINAK
FOR 1876."

DISKOUNT.—If yu want to find out the utter weakness of munny just try to hire a dubble tooth to stop akeing.

The happiest time in enny one's life iz the fust 20 minnitts after they hav had an akeing tooth jerkt out.

Dr. PORTER ought to be a contented man when he finds his friends taking such interest in his affairs, as the following paragraph indicates:—

"Married.—Oct. 21st, 1875, Dr. J. M. Porter, of Toledo, O., to Miss Mary Folger, of Massillon, O., at the bride's home. This announcement will be received with pleasure by Dr. P.'s friends, and especially so, since the impression was entertained in some quarters that he was rather opposed to such proceedings, and was inclined to fight it out on another line. May the joys of the happy pair ever flow on, and their happiness brighten throughout life's journey."

The above appears in our contemporary, the *Dental Register*.

THE NEW PRESIDENT OF THE ODONTOLOGICAL SOCIETY.

Mr. Vasey has been elected the President of the Odontological Society for the present year. It is satisfactory to see that most of our Medical contemporaries have announced this election coupled with good wishes for the success of the Society.

Mr. Vasey enters upon his duties at a time when his peculiar qualities will be of infinite service to the profession. Possessing as he does, in a most marked degree, firmness, sagacity, liberality of views, and considerable administrative power, we shall be surprised if his year of office does not very materially affect the position and influence of the Odontological Society of Great Britain.

We have to thank several friends for their approval of the suggestion we made in our last number of an Examination in Arts. We cannot insert all the communications we have received, but we extract the following from the letter of one of our correspondents:—

“I thoroughly approve of your editorial article in this month's *Review*, and regard it as the only sensible suggestion yet made towards a *real* reform in the dental profession. An Examination in Arts would do more than all the Acts of Parliament and Registrations in the world.”

We do not intend to let the matter drop, and shall be glad to hear from those willing to co-operate with us.

THE PATHOLOGICAL SOCIETY.

“An Old Man from the Country,” writing to the *British Medical Journal*, says:—“The early adoption by the Council in their report of your view of the absurdity of limiting its activity to morbid structure, and the necessity of including ‘morbid processes,’ and of cultivating chemical pathology as well as morbid anatomy, is still more hopeful; and when, instead of surgeons and physicians of the highest eminence, and of the most rusty acquaintance with pathology, we have in rapid succession as presidents such gay young pathologists as Murchison, Wilks, Sanderson, Hutchinson, Holmes, and Hulke, we may find the Pathological Society awake to the conviction that it is hopeless to circumscribe pathology in a soup-plate, or to trust for its progress entirely to dry extracts from the museum catalogues of the London hospitals.”

TO THE EDITOR OF THE “MONTHLY REVIEW OF DENTAL SURGERY.”

SIR,—It has so long been the proud distinction of English journalism, and especially of the medical section of it, that it keeps clear of detraction and personalities, that your remarks, as having reference to myself, in your last issue, were read with, to say the least, considerable surprise. Nor should I have felt it necessary to ask you for space to

exculpate myself, were it not that there are many young members of the profession to whom, not being personally known, it might be necessary to give an assurance that I could not lend myself to unprofessional practices, such assurance being, I am glad to know, wholly superfluous to those with whom it has been my privilege to enjoy a close and enduring friendship. My reply to your strictures shall be short and categorical. You, in effect, charge me with having issued a tooth powder, with a view, 1st, to increase my professional reputation, and 2nd, with a view to pecuniary profit, either by direct participation or by way of royalty. Now, apart from the improbability of any one possessed of the slightest literary culture resorting to so vulgar and commonplace an expedient, it is obviously and singularly ill-adapted to the proposed end; and any one who sought to get into high-class practice by such means would find himself grievously disappointed. Far better publish a treatise, or lectures, or read papers at societies, afterwards amplified for separate publication, as these can, by reviews and advertisements, be kept well before the medical and general public, associated with the author's name, and would not unnaturally be regarded as in some sort a guarantee of his proficiency. For some years past, however, it has been an object with me to contract rather than to enlarge the circle of my *clientèle*, and this has led me to turn a deaf ear to the importunities of publishers or the recommendation of friends, more especially as the educational requirements of our profession have been amply provided for by competent hands. With respect to the gross imputation of pecuniary interest in the matter, I declare most emphatically that not only was this never so in any shape or degree, directly or indirectly, but my self-respect was never assailed by any hint or suggestion of such a thing. Whatever has been done in this way has been done as a business exigency on which it has not been thought necessary to consult me, nor even, beyond a certain point, to attend to my remonstrances.

Yours truly,

EDWIN SAUNDERS.

The Saunders' Scholarship Fund.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—I beg to enclose for publication the list of subscribers to the above Fund. The array of names furnishes

the most satisfactory testimony of the way in which the valuable services of Mr. Saunders are appreciated by his professional brethren and others who have witnessed his exertions.

I cannot refrain from expressing the unqualified pleasure and gratification it has afforded me to act as Treasurer of this Fund, for I see in it, as I think all must see, an omen of good in the example thus set. I am sanguine enough to hope that it is but the commencement of a series of rich endowments for the encouragement of the alumni of the School and Hospital; indeed, it is impossible to over-estimate the value which attaches to the establishment of the scholarship, and great as is the gratitude of the profession to Mr. Saunders for his exertions and munificence in placing the Hospital in its present conspicuous site, he has rendered a still more valuable service in appropriating the funds raised in testimony of his labours and services to the establishment of the first dental scholarship.

I am, Sir, yours truly,

G. A. IBBETSON,

Hon. Treasurer.

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Clinical Lecture

Delivered at the National Dental Hospital

By HARRY ROSE, L.D.S.,

DENTAL SURGEON TO THE NATIONAL DENTAL AND METROPOLITAN FREE HOSPITAL OF LONDON.

In bringing before your notice these few observations in favour of the elevator as an instrument for more general use than it is at present, it is with the belief that those who

cultivate its acquaintance and carefully practise and observe a few simple rules and cautions, will be able to extract teeth and stumps that otherwise they would look upon with a sigh of mortification and regard as hopeless cases; and, instead of being able at once to give a merciful release to the sufferings of poor humanity, would find it necessary where the forceps are only used, to try again and again to obtain a sufficient hold on the carious and crumbling walls in order to draw the root from its socket, thus giving the patient a well-grounded opportunity of saying, "He had six or seven pulls at my tooth before it came out." Now, when the elevator is used properly this very seldom happens; for, instead of the pressure and pain, necessarily severe when we have to force the two blades of the forceps between the process and the root, there is only one blade to be looked after and pressed up or down as "the case may be," and then, with a steady turn of the wrist, using the socket and neck of the adjoining tooth as a fulcrum, the broad surface of the elevator is brought uppermost, and with it the root. The elevator that I have brought for your inspection I find very useful for general work, and also for the extraction of lower wisdoms.

For the removal of the stumps of the lower first and second molars, "lowers," when broken or decayed much below the level of the gums, an elevator for the right and left side is necessary, with the extremity bent at nearly right angles to the shaft; and for the removal of the six upper centrals, when there is only a small portion left in the cavity, or when, from caries, the whole inside of the root has been eaten out and left it like a hollow tube, a straight elevator, with an extremity representing a half-circle, with the cutting edge made quite sharp, and the two lateral points rounded off. With such an instrument one can remove the smallest point that remains; and I have myself removed the root of an upper canine $\frac{1}{8}$ of an inch in length, at a depth of nearly an inch from the surface of the gum.

I will now proceed to illustrate a few of the cases where an elevator may be used with advantage; but, before doing so, will mention a few general rules that ought to be observed when proceeding to use this instrument, for in unskilful hands accidents of a very serious nature might be the result.

In the first place, let the edge be keen and sharp, in order

to cut into and take a firm hold of the side of the stump or tooth to be removed.

Secondly, as a rule, stand on the same side of the patient as the tooth to be removed is situated.

Thirdly, when introducing the instrument into the mouth, hold the handle firmly in the palm of the hand and let the fore-finger be carried along the blade to within a quarter of an inch of its extremity.

And, fourthly, always have a guard, in case it should slip by the root coming out suddenly or the patient jerking the head.

Now, suppose we have to remove the right lower dens sapientia. We stand on the right side and rather to the back of the patient; the mouth must be as wide open as possible, and the operator puts his left arm round the neck of the patient and introduces his thumb into the mouth and against the lingual wall of the tooth; this will prevent any accident, should the elevator slip or the patient make a sudden movement; in fact, the only damage that can take place, if this rule is strictly followed out, is the point of the instrument running into the operator's thumb or "finger," as the case may be.

Now, having by the action of the palm of the hand and thumb, and the fore-finger acting as a guide, made an entrance between the necks of the teeth, in a direction inwards and downwards until the whole cutting edge will come into play, then, with a steady turn of the wrist, the tooth may be raised from the socket.

I have mentioned that the left thumb should be used as a guard on the right side of the lower jaw.

On the left side the left fore-finger may be conveniently used, and also on the left side of the superior maxilla, and on the right side of the latter the fore or the middle finger is the easiest to apply. These simple precautions are soon learnt, and will stand between the operator and danger when he least expects it.

I need scarcely mention that the use of the elevator has been condemned in the case of the upper wisdoms; but I must plead guilty to having used it in two or three cases, however, only as a last resource, and I thought myself perfectly justified in running the risk of possibly fracturing the tuberosity to allowing the patient to suffer the agonies of tooth-ache. In these cases the precaution was taken of using

a very narrow-bladed elevator, and I did not in either of them experience any difficulty in their removal by this means, nor did any bad results ensue.

For loosening upper and lower bicuspid, especially when they are much decayed and liable to break; for the upper molars, also, when the crown has come away and the edges of the tooth are bevelled down too much to allow of the forceps grasping it, sometimes, to my surprise, the three roots have been extracted quite easily with this instrument after having resisted all attempts with the forceps. It is also especially useful when the patient cannot open the mouth wide enough for the insertion of any other instrument.

I do not think it will be out of place here to draw your attention to the alveolar forceps for the removal of the teeth of the superior maxilla, either when they are much decayed or broken off in the attempt to extract them by other means. As these forceps are only meant to move and loosen the tooth or stumps in its socket but not to grasp and take it away altogether, we may, I think, conveniently look upon them as a species of elevator, and describe them under that heading.

Three pairs of these forceps are necessary. A straight pair for the removal of the upper centrals, canines, and bicuspid, and a right and left pair with the jaws bent at the same angle as ordinary stump forceps for the extraction of the first and second molar teeth.

In these forceps you will notice that one of the blades is represented by a sharp point, whilst the other is like the jaws of an ordinary pair of stumps.

When the two jaws are antagonised, the pointed one should be a trifle longer and strike above the other.

Now let us see the action of a pair of these forceps, and we will begin with the straight ones on a strong upper canine root badly decayed.

The first thing to do is to press the blade well up the posterior wall, taking care to have as much bearing against it as possible; then, with the pointed extremity of the other blade pierce the gum and outer wall of the alveolar process exactly in the centre of the root to be removed, and as high up as you can get it. When this is done, and the point is felt to strike against the tooth, a steady outward pressure is given. What takes place then is this: the root is moved

slightly forwards and at the same time lifted from its socket by the combined action of the two jaws of the forceps, one acting slightly above the other, and as it were forcing the root from its place and attachment, it is then only necessary to take it away with any convenient instrument. It has been said that the operation is more painful and that there is a liability to fracture the outer wall of the alveolus, but I have not found such to be the case, the process is only pierced, and expands sufficiently to allow of the root being moved; I have never seen any injury result from this operation, and as regards being more painful to the patient, such cannot very well be the case, for, as these forceps are specially designed to meet difficult cases, it is to be assumed that anything that relieves the patient soonest from suffering is certainly the most merciful.

For the removal of upper molars, when broken down and the three fangs still undivided, and the tooth has that clear fracture that tells of the previous struggle, how the operator has tried his utmost to move the tooth, how more and more strength has been applied, until at last and almost in a state of desperation he makes the last attempt, and much to his disgust finds the crown of the stubborn member in his forceps, and the roots still in their places, looking as if they were set in rock and defying him.

Now is the time, I say, for the alveolar forceps, with the right or left pair as the case may require; push the blade up the palatine root, then with the pointed extremity pierce the process opposite the middle of the anterior root as high as possible; and, if the operator uses this instrument with boldness, tempered with caution and the due observance of minor details, the tooth is bound to come out, if it was the strongest one that ever grew. In conclusion, I wish it to be understood that I do not for one moment wish to disparage the ordinary stump forceps, but my object is to bring more vividly before you the uses that the instruments named in this lecture can be applied to; so that when a difficulty presents itself you may have at your command more ways than one of encountering and overcoming it; thereby raising yourselves in the estimation of your patients, and thus placing the only true barriers, knowledge and skill, between yourselves and the unscrupulous men who at the present time cannot be prevented from boldly calling themselves Surgeon Dentists.

Notes of Six Cases of Congenital Deformity of the Palate Treated Mechanically.

By T. WILSON HOGUE, D.M.D. Harvard.

No. 1. Miss S——, aged 27 years, was a patient of the late Dr. T. B. Hitchcock, of Boston, U.S.A., at whose request I undertook the case when at Harvard University. Both hard and soft palates were fissured, but the speech was tolerably distinct. In January, 1871, a rubber velum was supplied with a gold retaining plate, the muscles of the soft palate being used to raise and depress the artificial substitute. Twelve months afterwards I heard that her speech was not very much improved; but from the first she always said that the artificial palate was a great assistance to her, as it kept her from feeling fatigued whilst conversing.

No. 2. In June, 1871, Miss S——, aged 14 years, was sent to me by Dr. J. Matthews Duncan, of Edinburgh, to have an artificial palate adapted. I found the cleft involved the soft palate only, reaching forwards to the posterior margin of the hard, and her speech was very indistinct. The artificial substitute, which was inserted on the 15th of July, was of soft rubber, held in position by a gold retaining plate provided with a hinge to allow the muscles of the palate to elevate and lower the rubber velum. About a year afterwards the improvement in speech was so encouraging that she took a few lessons from a teacher of elocution with a view to perfect her articulation of certain sounds. I have heard that she was considerably benefitted by them, and that her speech is not only improved but is still improving.

No. 3. About the end of October, 1871, Miss F——, aged 19 years, consulted me. There was entire fissure of both hard and soft palates. She had been operated upon for harelip many years previously, but the lip was so short and stiff that I feared her articulation from this cause alone would never be very good. Her speech was exceedingly indistinct. The rubber velum, which was adjusted on November 30th, was formed so as to be under the control of the soft palate, and was held in position by a gold plate. I wrote to her a few days ago, and in her reply she says, "I am glad to have an opportunity of letting you know that the palate has been a great comfort to me and has helped my speech very much."

No. 4. Mr. W——, aged 18 years, was sent to me in

November, 1872, by Mr. Annandale. On examination I found that there was scarcely any soft palate at all, and that the hard was partially cleft. There was too little tissue to admit of an operation being performed with any reasonable hope of success. In this case the muscles of the soft palate could be made of no assistance. The artificial substitute, which was finished on December 13th, consisted of a gold plate with a large soft rubber curtain. I saw him about six months after, and improvement was noticeable in his articulation, but as he went to Australia and had the type metal moulds sent out to him I have been unable to trace the case any further.

No. 5. Miss M——, aged 13 years, was sent to me in December, 1872, by Mr. Annandale. No fissure of the roof of the mouth existed, but the soft palate was abnormally short. The speech was indistinct and the voice had the same unpleasant sound as in cases of fissured palate. Patient had consulted Sir William Fergusson, who thought that as she grew older her speech would improve. Being, however, at school, where the indistinctness of her articulation proved very inconvenient, it was desirable to try some remedy at once. On January 23rd, 1873, the palate was inserted, the retaining plate of which was provided with a delicate gold spring so bent as to press gently against the rubber velum which was fan-shaped. This kept it in close contact with the velum palate and also allowed it to have considerable motion. The improvement in speech has only been slight.

No. 6. This case occurred in Dr. Miller's practice, and was that of an infant a week old, which had a large fissure of both hard and soft palates complicated with double hare-lip. When seen by me it was in a very feeble and exhausted condition apparently from want of nourishment. A rubber palate (one of the rubbers of Case No. 2) was inserted and kept in position by passing a ligature through the rubber and fissure and tying it round the inter-maxillary bone in front. With this aid the infant took nourishment from a feeding-bottle very nicely, but was never able to suck the breast, probably because the mother had very short nipples. The little patient never rallied, however, and sank from exhaustion in a day or two. Another palate for this case was prepared and attached to the nozzle of a Maw's feeding-bottle, but it was only used once or twice.

The impressions for these cases were taken with plaster

of Paris and the palates were all adapted on Dr. Norman W. Kingsley's principle. Narrow plates of hard platinized gold were used to retain the vela, and thus a small portion only of the hard palate was covered. Some of the rubber vela were, after being worn for a considerable period, slightly altered in form to more fully meet the requirements of the case; the necessity for this can only be determined by time. The moulds were altered by flowing a little soft solder with a blow-pipe where wanted and scraping away the corresponding portion of the other half, or after cutting and soldering one half casting a new second.

In these cases I found the difficulty was not so much to adapt an appliance that could be worn with comfort as to get it carefully modified so that it improved the articulation. These are all the cases I have yet undertaken wholly myself, although, when with Dr. Kingsley, of New York, I assisted in several.

Stourville, Bournemouth.

Alveolar Abscess.

By MORDAUNT STEVENS, M.R.C.S., L.D.S., M.D., DD.S., Paris.

If I am not mistaken, we are all searching together for a rapid and easy method of curing alveolar abscesses; it takes so long to open up and disinfect pulp cavities, cure the abscess, and replace the extracted nerve by carefully filling the roots to their very apices that, for the sake of our patients, to say nothing of ourselves, we ought to endeavour by patient experimentation to arrive at such a desirable result. As far as I can see, we are no nearer the mark than we were ten years ago. We have tried creosote, carbolic acid, tannin, oxy. chl. of zinc, salicylic acid, &c., and succeeded with all these agents but only after careful and laborious manipulations. I notice that some gentlemen have found a solution of the problem, they cannot unravel the Gordian knot—so they propose the Alexandrian method. “We cannot cure alveolar abscesses *rapidly*, so we will . . . let them go on running.” A vent-hole is carefully drilled for the purpose, and the gases and other putrescent animal matter allowed to escape in the mouth. The tooth no longer troubles the patient, but his friends carefully avoid his vicinity and no wonder.

I would, so far as I am concerned, a hundred times rather have the tooth out than allow this ancient operation to be revived for my sake, turning my mouth into a common sewer. The plan proposed by Mr. Coleman may also be objected to. This gentleman proposes putting arsenious acid into the pulp cavity and filling immediately ; but to cure an alveolar abscess so rapidly we must not only disinfect the putrescent material but *we must occlude the terminal opening of the roots*. Arsenious acid does not do this, nor does any other antiseptic used merely as an antiseptic. I must confess, although I find it very easy to criticise, that if called upon to suggest a rapid *and easy* cure for alveolar abscesses I could not propose one, although I have studied this subject with special attention and made numerous careful experiments to accomplish this object.

When a fistulous opening exists on the gum we can (particularly when we have to treat a single-rooted tooth) apply the dam, remove the dead nerve, soak the nerve cavity for half-an-hour with carbolic acid or some other antiseptic, fill the root with gold wire, and the cavity of decay with non-adhesive foil, all in one sitting ; but when no fistulous opening exists I confess I cannot cure an abscess under five sittings (as I do not like perforating the alveolus through the gum) ; and, for the sake of veracity, I must add that not only have I not found a rapid method of treatment for these affections, but I am equally distant from having found an *easy* one. What we require is a preparation which, being injected in its liquid state into the pulp cavity, will disinfect whatever *débris* of the dead nerve we have not been able to remove, and being drawn "by capillary attraction up the nerve cavities will there solidify. I have tried for months, nay years, to find this preparation, and have signally failed.

Oxychloride of zinc, however liquid, will not do this, nor will it, when mixed with creosote, carbolic acid, salicylic acid, or chloride of lime. I have tried everything that could be thought of without success.

We have to enlarge the nerve cavities, clean them thoroughly, and carry the filling up to the end of the root to-day as we did five years and ten years ago.

All hail to the man who will find a rapid and easy cure for alveolar abscess, but alas ! as the song says, "It has not happened yet."

On Methods of Soothing Pain produced by Dental Caries.

By DR. E. MAGITOT.

PARIS, 7th Nov., 1875.

MR. EDITOR,—You published in your number for the 30th of October last a short note by Doctor Lardier, relative to the employment of collodion for soothing pain produced by dental caries. In that note our honourable *confrère* told us that having tested the insufficiency of different means proposed—those which I have formulated, as well as others—he had recourse to this agent, which has procured him great success in many cases.

I am far from calling in question these facts. Indeed, collodion has long been used, and it may be suitable in certain circumstances. These circumstances are always so special that, on the other hand, I can state cases where the application of collodion to dental caries has been really fatal. In one of these, quite recently, a single dressing of collodion provoked an explosion of violent character, followed by phlegmon of the face and a rather extended necrosis of the upper jaw. Surely, if Dr. Lardier had met with a case of this nature his confidence in collodion would be much shaken.

In fact the choice and application of therapeutic means depends essentially, as is well known, on the exact knowledge the case to which they may be applied. Dental caries has various forms, diverse symptoms, and a remedy which may suit one form of the disease is absolutely wrong for another. Any medicaments recommended for the alleviation of pain in caries, those that I have indicated, as well as others, as collodion, any of these ought not to be considered applicable and useful in general. It is with regret that I have sometimes found in certain medical publications one of my formulas reproduced under the title, "Treatment for Dental Caries." A therapeutic mixture no more constitutes the treatment of caries than a blister represents that of pneumonia; this treatment is for such a form or such a symptom of a certain affection, and not for a morbid entity. These are truly common failures in modern therapeutics.

If Dr. Lardier had taken the trouble to make known at what period of the disease and against what kind of pain he had employed collodion with success, he would have rendered a certain service to practitioners, who often meet with

accidents of this kind. This determination would be easy, even *à posteriori*; but we would adhere to generalities, and remark, above all, that the therapeutic indications of dental caries are numerous and distinct, against the element of pain opiates and anæsthetics are occasionally employed. In certain cases occlusion alone brings temporary calm, and it is in this condition we think that collodion is useful, consequently, in the course of the second period, and at the commencement of the third, dangerous. If there is inflammation therapeutics again vary. In case of denudation of the pulp, we must have recourse to astringents and caustics. Complications of caries are themselves very numerous, and require appropriate treatment.

What we can, nevertheless, affirm is, that in almost all cases the relief from pain in caries may be rapidly obtained; that the radical and complete cure of the patient is possible, but that would be according to the therapeutic means established, on the diagnosis differing according to the varieties, periods, and complications of the lesion.

The question, as may be seen, is sufficiently complex, and cannot be treated of within the limits of a letter. The remarks that we have made have for their end only a warning to practitioners against the danger of falling, with respect to dental caries, into a blind empiricism in according a constant therapeutic action to a means which should be used for a particular case, to a certain symptom, and not that is to say, in a multiple pathological state.

Believe me to be, &c.,

L'Union Médicale.

DR. E. MAGITOT.

Congenital Large-celled Alveolar Sarcoma.

By JOHN STEVENSON, M.B., Edinburgh.

The following case is remarkable on account of the congenital occurrence of a large sarcomatous tumour of a rare anatomical type, presenting physical characteristics which at first resembled another form of disease.

The patient was a baby aged about fourteen days, when first seen by me. To all appearance the child was a healthy one, and pretty well nourished. There was situated on the

right side of the neck and face a swelling most prominent behind the angle of the lower jaw, and extending under the chin, but not crossing the middle line. Manipulation of the tumour gave the impression of several hard glandular enlargements corresponding in situation to the right parotid, submaxillary, and sublingual glands. On looking into the cavity of the mouth, the tongue was observed to be pushed up towards the roof of the mouth, and to the opposite side (that is to the left) by a sublingual tumour about the size of a walnut extending behind the frænum, and on its opposite side for about a quarter of an inch. The growth was elastic and moveable up and down, but did not feel like a cyst. A small incision over its interior surface caused a little thin clear fluid to be projected from it, and a gelatinous-looking body to protrude through the wound. The mother stated that the enlargement on the side of the neck and in the mouth was observed when the child was born, and that, in consequence of the latter, it had been unable to suck, and she had been obliged to feed it with a spoon.

Treatment.—The mother was ordered to rub in a piece of the size of a pea of the following ointment every night :—

R Unguenti iodi, P.B., \mathfrak{z}_{ss} ; unguenti hydrarg. $\mathfrak{z}j$. ; adipis \mathfrak{z}_{ss} .

Two grains of potassium iodide were ordered to be taken twice a day.

The case was looked upon as one of myxoma causing mechanical obstruction of the ducts of the salivary glands from external pressure, thus converting the glands for the time into retention-cysts; but against this theory were the facts that the enlargements corresponding in position to the salivary glands of the right side were rather more resistant on palpation than a retention-cyst of such origin; that although the ductus Stenonis was not pressed upon by the sublingual tumour, the enlargement in the situation of the parotid gland was as large as those in the situations of the other salivary glands. Enucleation was supposed to be out of the question in consequence of the tender age of the child. A seton was passed through the growth of the mouth, and pulled backwards and forwards daily. After the treatment had been continued for four days, the swelling on the side of the neck was observed to be perceptibly smaller, but that inside the mouth was perhaps a little larger, as it seemed to extend further to the opposite side of the frænum linguæ. The mother was told to continue

the ointment; and three-grain doses of iodide of potassium were prescribed. It was thought advisable to take out the seton, as the waste caused by suppuration seemed to be small in proportion to the rapidity of growth, which it was supposed the irritant action of the seton on the tissue might tend to increase.

The child died at the age of three weeks, when permission to examine the tumour was asked and given, and the following additional history elicited. When Mrs. S., the mother, was four or five months gone in pregnancy, she went to the Sunderland Infirmary to visit a cousin of her husband, who was reported to be dangerously ill with tumour in the womb. Mrs. S. says she got a fright, and felt very much put about. She also states she has had twelve children besides this one; the longest lived died at the age of eighteen months (cause unknown). The remaining ones were either premature, or only survived a week or two. This child seemed to die of asphyxia, as it took food greedily, and could swallow till the last.

Necropsy, seven hours after death. The body was spare, but not markedly emaciated. Rigor mortis was well pronounced, but there was no great *post-mortem* lividity. On the right side of the neck, extending from behind and in front of the ear, along the lower margin of the lower jaw beyond the middle line for a short distance, was a large rounded tumour, over which the skin appeared natural. Its vertical sectional outline would be what, in the language of modern pathology, is distinguished as a tuber. It was elastic, and softest where it approached the middle line of the neck, and about the size of a small foetal skull at the full time. It was distinctly lobulated and movable to a small extent. In the mouth under the tongue, the tumour could be seen pushing that organ upwards and backwards, and to the opposite side. The little finger passed over the dorsum, could not reach the epiglottis on account of its size. It projected beyond the frænum on the left side. Passing down behind the body of the lower jaw, it formed a marked prominence in the intramaxillary region, which could be felt to move down when pressure was made inside the mouth. The morbid growth could be traced along the lateral aspect of the tongue to its root. A T-shaped incision was made over it, and the skin and superficial fascia dissected up. On exposure, the substance of the growth appeared soft and

somewhat translucent or greyish white, apparently enclosed in a thin fibrous capsule, and easily separable from the superjacent fatty tissue. Its deep relations were not defined, as the parents requested that no more should be done to the body than was necessary to determine the nature of the disease. When the growth was cut into, it was found to have undergone cystic degeneration in its central parts to a considerable extent, leaving as the products of retrogressive change several cysts, differing in size from one another. Some contained caseous matter resembling pus; some bloody and amber-coloured serum; and one was filled with what resembled blood; one or two cysts were as large as a walnut. The caseous matter was mostly found in the smaller cysts, and, in the smallest, resembled in consistence soft cheese.

Microscopical Examination.—The tumour was hardened and several sections made, some of which were stained with carminate of ammonia and examined. Minute shreds were also teased with fine needles. It was ascertained that the structural elements were combined in the way described by Rindfleisch ("Pathological Histology") as characteristic of large-celled alveolar sarcoma. The cells were of two sizes: the smaller, spindle-shaped and very like the cells of spindle-celled sarcoma, formed a network, in the meshes of which were contained groups of larger round or nearly round cells, with large prominent nuclei, which readily took on the carmine stain; with the cellular elements ran very fine filaments or fibres of imperfectly developed connective tissue, to which the cells were very strongly adherent. Many of the cysts contained true pus-segments, others appeared to have resulted from colloid metamorphosis.

Can this have been a case of sarcomatous diathesis; that is, one where there was a tendency of the connective tissue series to the development of sarcomatous new formation? and was this latent tendency roused into activity during intra-uterine life by a maternal impression?—*British Medical Journal*.

Practical Communications.

By ALEXANDER SCHELLER, Warsaw.

PARTIAL ALVEOLAR NECROSIS AND REGENERATION.

A patient, of about 40 years of age, of weakly constitution, and traces of insufficient nourishment, came to me by the

advice of her doctor, to have three of her front teeth removed. They were the upper teeth of the left side, from the middle incisor to the bicuspid; and, judging from their appearance, quite sound. The patient suffered frequently from alveolar abscesses, but could not say near which tooth they generally appeared. The last abscess had been emptied some days ago. On examination, the following appearance presented itself—the gum was intact, and without any scar; the abscess had therefore emptied itself within the edge of the gum, otherwise the gum was slightly hypertrophied, but very little swelled. There was no pus to be seen. All three teeth, especially the bicuspid, were very loose. On touching the teeth it was seen that the whole front part of the alveolar plate was loose, and the teeth easily moved up and down.

The teeth, as I have remarked, being quite sound, I was strongly against extraction, and I convinced the patient, notwithstanding the advice of her doctor, that it would be for her advantage to let them remain. The treatment I commenced with a strong horizontal cut, by which the gum over the three alveoli, was divided to the bone. I placed in the wound as well as I could a pad of lint. The wound was cleansed daily and painted with tincture of myrrh and iodine. The patient was advised to take exercise in the open air and partake of a generous diet. As she had very little appetite, I ordered a preparation of quinine and iodide of potassium to strengthen her. Towards the end of the second week, I removed a sequestrum which surrounded the front alveolar edge of the canine and lateral incisor. The probe struck upon the two bared fangs and upon the rough edge of the jaw; the bone appeared otherwise to be intact. The teeth were somewhat firmer; very little pus.

Strangely enough, this sequestrum, as well as those removed later, had the appearance of a healthy fragment of bone, the lamellæ usually quite porous in necrosed portions of bone, were almost intact. The spongiosa appeared still full of marrow and not in the least weakened. There must have been the least possible suppuration, and this must have proceeded from the insufficient nourishment mentioned above. I continued the same treatment, and told the patient to come and see me once a week. Unfortunately the patient had an attack of intermittent fever, and was unable to leave the house. As I do not willingly visit out of

my house, I left the treatment entirely in the hands of the assistant, with the understanding that the wound was to be kept cleaned open with lint, and to let me know at once should anything unusual happen. In the course of a fortnight he informed me that in introducing the lint he thought he felt a piece of loose bone. I therefore visited the patient, and removed a sequestrum which stretched from the above-mentioned as far as the middle of the incisor on the right side. The wound was now treated in the usual manner, only that I substituted a solution of caustic in the place of the iodine, and touched the edges of the wound, which were covered with growths. Healing took place gradually, and in consequence of the fever, superior nourishment was given.

In the course of the two next months the failing portions of bone were replaced, only the front surface of the fang of the lateral incisor remained rough, and made no attempts to cover itself. I then ordered it to be painted every three days with a solution of iodine in carbolic acid, and had the pleasure when I again visited the patient a fortnight later, of seeing the fang covered with healthy granulations. In a short time the process of healing was accomplished.

VIERTELJAHRSSCHRIFT.

DEPOSIT OF LIME IN THE PULP, AND CONSEQUENT IRRITABLE CONDITION OF THE DENTINE.

It is a generally-known fact that from irritability of the nerve centres or nerves, pain is not generally felt in the irritated place, but at the extreme ends of the nerve filaments. How much any disturbance in the pulp of a tooth influences the extreme anastomoses in the dentine, the following case shows:—

A patient, of syphilitic appearance, who had taken more grains of mercury than he had hairs on his head, had for six months (according to his doctor), suffered from violent facial neuralgia, which, after months of useless treatment by his doctor (as so often happens), was cured by the ordinary death of a diseased pulp. Having become knowing by experience, this time, after enduring violent pain on the opposite side of the face for a few days, he came to me instead of going to his doctor. The most minute investigation of the remaining molars on the left side gave no positive result, and

I almost thought that the patient had come to the wrong person, when I changed my opinion through using cold water. On syringing the only left upper molar, the patient screamed out, evidently in very severe pain. When I touched the neck of the tooth under the gum, with the probe, the patient complained of extreme sensitiveness. Although so much pain seemed strange to me, I believed it to be in connection with the ordinary so-called Dentinitis (Chase) and ordered the usual remedies which I have found useful, that is to say, I painted the neck of the tooth with a solution of chloride of zinc and then a coating of collodion to protect it from outer irritation. When the skin so formed came off, I renewed both medicaments. After the patient had followed my directions with the greatest patience for a week, he visited me again to complain of their uselessness. I then trephined the tooth, and applied arsenic paste to the pulp canal; this made my patient so uneasy that he went away after an hour, but returned the following day complaining always of pain. As the patient was obliged to travel that day, he begged me to extract the tooth, and as I felt anxious to examine it, I acceded to his wish. The pain ceased immediately, and the gentleman told me later that he felt himself the happiest man on earth when the tooth was out. I divided the tooth, and as I squeezed the pulp between blotting-paper, I felt several hard bodies the size of a grain of sand, one as large as a grain of millet. Whether these were a deposit of lime or osteodentine I cannot say, as I am no microscopist.

VIERTELJAHRSSCHRIFT.

New York.

[*From our Own Correspondent.*]

NEW YORK, DEC. 14, 1875.

DEAR MR. EDITOR,—As some new things have been passing in dental circles here, I will spend a few moments in writing such of them down as occur to me.

In the first place, the New York Odontological Society has just held another meeting, similar to the one held last year about this time.

The Society and its guests, to the number of about 150,

gathered at the house of Dr. W. H. Dwinelle, on Monday evening last, when papers were read by Drs. Shepard and Hawes, of Boston, and one from Mr. Beers, of Montreal. After these came short addresses from Drs. Hamilton and Marion Sims, both well-known men in the medical world, and then a supper, such as Dr. Dwinelle knows so well how to get up. The next morning the Society met in the parlours of a church, and in three sessions, morning, afternoon, and evening, succeeded in carrying out the programme herewith enclosed, presenting at one meeting material enough for three good meetings, eleven papers in all, of which five at least were notable additions to dental literature.

The gentlemen who presented papers to the Society this year were new names there, none of those whose papers appeared last year being on the programme this time, though several were present. At the close of the evening session on Tuesday, all the gentlemen present were invited to a collation at a neighbouring hotel (the Ashland House), where, quietly seated around the supper-table, this meeting was brought to an end. Among the remarkable papers that were read was one on "Necrosis and its antecedents," by Dr. Wm. H. Atkinson, who has before now been designated as the "incurable." He used in this paper nearly the same language as other mortals, and so succeeded in making himself understood, and elicited the warmest praise for his effort. Dr. Palmer, of Syracuse, brought up the electrical theory to account for some of the phenomena of dental decay, and it must be said of him that, if he has not succeeded in explaining them, no one else has, thus far; and it may be well to look into his theory pretty carefully before it is rejected. I do not undertake to give any abstract of the papers, as they are all to be published in a volume soon, when such portions will be copied as to you may seem good.

The meeting was a fine success on the whole, and shows what a little steady effort can accomplish. The Society has, I believe, kept the same men at the helm year after year until now, it is regarded with very general favour everywhere, its meetings are the most full of interest and value, and its transactions are published far and wide, through its arrangements with the publishers, which are such that very soon after its meetings are held, and before the interest in

them has died away, its transactions begin to appear in the journals.

On the discussion over the paper of Mr. C. Spence Bate, Dr. J. Foster Flagg, of Philadelphia, made a very striking statement. He said that some years ago the statement was made that creosote was the best solvent of arsenious acid. He caused some to be triturated two or three hours daily for some time, then put it in a close bottle and let it stand six months,—and it was fearfully hard work to keep his hands off that bottle for six whole months. At the end of that time he drew off with a syphon the superabundant creosote, and had it tested for arsenic by all of the best chemists in Philadelphia, and they all reported none in it.

Dr. Flagg then took 1-25th of a grain of arsenic, and applied it to the pulp of a tooth, on some cotton. After a day he took it out, saved it carefully, and applied the same cotton to another tooth, then to a third and a fourth up to the tenth. All the pulps were devitalised with equal facility, and all were removed painlessly and put upon a bit of paper, and when all ten had been got together, they were together tested for arsenic, but none was found. The same bit of cotton that had served to devitalise all these pulps, was then used to kill a frog, and after he was dead, he was thrown into a heap of other dead frogs, and left some weeks. The frog killed with arsenic was entirely preserved from decay, although in direct contact with the others which became putrid. Thus much on the question, Does arsenic produce periostitis from being used to devitalise the tooth pulp?

Some amusement has been caused here by the editorial in the *Monthly Review* on the subject of "Advertising," which gave rather a sharp rub to the so-called American Academy of Dental Surgery—Dr. Perine, President. This Society, I understand, has been called together to take action on the subject of changing its name!! Don't say anything more about them, or you may discourage them. A young man in one of the dental laboratories here, informed me that this was the Dental Students' Society of New York! I see that Dr. McQuillen, on page 639 of the December number of the *Cosmos*, is reported to have made remarks at the Association about your correspondent. Ah! well, poor dear; he evidently doesn't know anything about editorial work. Oh no! forgotten it all, maybe. Well, no matter,

I'll forgive him ; and, with all due deference, I venture to think your readers in Europe and America can stand the truth, and so can *we*, unless it touches our own dear selves, and then we are apt to show it. I enclose a description of the dental dinner of last Tuesday, and so close my letter for this time.

An Englishman with the New York Odontological Society.

We have received an interesting letter from a correspondent now in America, containing an account of the meetings of the New York Odontological Society on the 20th and 21st ults. As this may probably be interesting to many of our readers, we take the following particulars from our correspondent's communication, merely premising that the writer is a member of the profession, well qualified to form a good opinion on what he saw and heard :—

The meeting of the 20th was held at the house of Dr. Dwinelle, No. 27 West Thirty-fourth-street, at 8.30 p.m. The rooms were large, well lighted, and well filled, for although there are only some twenty members, the invited guests were so numerous that the numbers present were 153. After a cordial welcome from the host, business began. The evening seems to have been entirely taken up with a discussion upon six year old molars, Dr. Shepard asserting they had a tendency when taken out to drive bicusps back.

Dr. Hawes urged the cleaning of teeth at night and rubbing dry chalk in the interstices, and remarked that decay did not go on during the day, but at night when all parts were at large.

The evening was brought to a close with a cold collation, to which our correspondent says they all did ample justice.

There was a heavy agenda for the 21st, when the meeting was held at the Presbyterian Church Parlours, Fourth Avenue, at 9 o'clock. There were no less than eight papers on the list, three of which bore names well known here—Mr. Spence Bate, Mr. Charles Tomes, and Mr. Fletcher.

Referring to the first-named of these, Mr. Spence Bate, "On the Antiseptic Treatment of the Dental Pulp and Pulp Cavity," the writer says, "I think he has done some small

harm in creating a wrong impression on men's minds here with regard to the practice of leaving pulp cavities of dead teeth unfilled. He relates a case of a lateral stopped with gold, periostitis occurring a few days after treatment. The tooth had to be taken out, when a bristle of a tooth-brush was found extending through foramen ad apux, which of course speaks for itself."

He thinks, on the whole, the meeting compared decidedly favourably with those at home. There was a friendly feeling throughout, and the tone was both pleasant and genial. The agenda was printed on a very neatly got up card, which could be imitated to advantage by our English Society.

Odontological Society of Great Britain.

The annual meeting of this society was held on Monday evening, the 10th inst., Alfred Coleman, Esq., vice-president, in the chair.

After the confirmation of the minutes, the ballot was opened.

The following Members were elected as Officers and Councillors for the year 1876:—

President, Charles Vasey, Esq.

Vice-Presidents (resident): Samuel Cartwright, Esq., John W. Elliott, Esq., Edwin Saunders, Esq. (Non-resident): T. R. M. English, Esq. (Birmingham), G. W. Buchanan, Esq. (Glasgow), Daniel Corbett, Esq. (Dublin). Treasurer: James Parkinson, Esq. Librarian: Thomas A. Rogers, Esq. Curator: C. S. Tomes, Esq. Honorary Secretaries: Henry E. Sewill, Esq. (Council), J. Smith Turner, Esq. (Society), Oakley Coles, Esq. (for Foreign Correspondence.) Councillors (resident): G. A. Ibbetson, Esq., Henry Moon, Esq., W. G. Ranger, Esq., Thomas Edgewell, Esq., Henry I. Barrett, Esq., Alfred Coleman, Esq., Charles West, Esq., E. B. Randell, Esq., F. G. Bridgman, Esq. (Non-resident): G. W. Smith, Esq. (Manchester), Frank Petty, Esq. (Reading), J. E. Rose, Esq. (Liverpool), C. H. Bromley, Esq. (Southampton), S. Amos Kirby, Esq. (Bedford), J. Dennant, Esq. (Brighton.)

The Treasurer's report, read by Mr. PARKINSON, showed that the total receipts of the year amounted to £418 4s. 2d.,

and the disbursements to £364 15s. 3d. He stated that the number of members was—Resident, 93; non-resident, 157; corresponding, 22; and honorary, 27. Five members had died during the year, and seven had retired from the society. New members elected: Resident, 7 non-resident, 8; honorary, 2; corresponding, 1.

The CHAIRMAN said the librarian informed him that there had been some increase of the books borrowed, showing that the library was on the whole more appreciated. The curator of the museum, in his report, alluded to the numerous contributions which had been from time to time recorded, and also to certain valuable specimens which had been purchased.

Mr. MOON then gave some details concerning the interesting case brought before the society at the last meeting, when the patient attended and was examined by three gentlemen deputed for that purpose.

Mr. C. VASEY had much pleasure in substantiating all that Mr. Moon had said with regard to this case. He had never seen a case of such extensive loss of material, so thoroughly, so efficiently, and so perfectly restored. It was one which threw credit and honour upon their work. The surgeon could restore to the lame the power of walking; the aural surgeon might confer the benefit of hearing, and the ophthalmic surgeon the benefit of sight; and on this occasion it was literally the dentist restoring voice to the dumb.

Mr. OAKLEY COLES explained some of the details in the manipulation of the rubber pad used in this case. It was made in the ordinary way, in the first instance, of wax and gutta percha, moulded in plaster. After trying at first type-metal, he succeeded in getting the best moulds by means of zinc, as he obtained the hardest surface, most perfect polish, and sharpest joints for articulation between the two halves by making them of that metal. The undercut was obtained simply by core casting, and the whole surface thoroughly polished by pumice powder, burnished and afterwards polished with a soft brush at the lathe. The pad was vulcanised six hours, and the one in wear was certainly very soft and velvety on the surface. The chief novelty in the treatment was the fact that the pad was made entirely distinct from the gold plate, taking the place of a water-bed, to prevent any possible friction. If the pad was fixed to the plate, then, with every movement of the jaw, there was a certain amount of

friction between the pad and the remains of the upper jaw. Being detached from the plate, any movement produced friction between the plate and the pad, and left the contact between the pad and the jaw perfect and unmoved.

In reply to Mr. Vasey,

Mr. MOON said he did not try the ordinary swivels, but used the moveable swivels devised by Mr. Henry Rogers, as they made it easier to get the piece into the mouth.

Mr. SEWILL inquired why Stent's composition was used instead of plaster of Paris in taking the models.

Mr. OAKLEY COLES said it was important that a material should be used which would exercise sufficient pressure to restore the front part of the mouth to its natural contour, and that could not be done by means of plaster, which would simply have gone up into the space and have given a perfect impression of the mouth, with the lip in a depressed condition. Using Stent's composition, they obtained a perfect impression of the hard tissue, and, at the same time, the pressure necessarily exerted pressed forward the lip, and so gave something approximating to the natural contour of that feature.

Mr. C. J. FOX brought forward a new articulating frame, invented by Mr. Davidson. Although apparently complicated, it was found practically to be very simple and ingenious.

Mr. DAVIDSON explained the construction of the frame, for which he claimed certain practical advantages.

Mr. TURNER read a paper forwarded by Mr. Fletcher.

The following is an abstract :—

“The Tube-packing Test for Amalgams.” One objection raised to this test is that, in a circular cavity with perfect sides, wedging is possible, such as cannot be done in irregular cavities in the mouth. This is undoubtedly a mistake; wedging is only possible when either the wedge or cavity is elastic. When the plug is of the consistency of hard putty, without a trace of elasticity, wedging is simply impossible under any conditions. Further than this, I find experimentally that there is no difference in results in different forms of cavity, provided equal care is taken in each case.

Certain failures I could not account for in any way by any known test, as the results differed most seriously with the same samples in the same mouth.

When I devised the wet-packing test these failures were at once explained, as the alloy proved to be one which had not the power of retaining its form in a cavity to which moisture had access, provided the walls were not absolutely dry at the time of packing. Further experi-

ment has proved that this peculiarity exists in many other alloys to a serious extent.

Now I hold that the proof of this fault in plastic alloys, and also the discovery of means to prevent it, is owing to the use of the packing test alone, and that no other known test is sufficient to show what I am certain is the cause of most, if not all, of the failures with amalgams. When we compare the results of packing in cavities with wet sides with the results seen in the mouth, the perfect resemblance between the two is most striking; the raised plug and the parted margins so commonly seen being exactly reproduced. That this property is totally distinct from shrinkage is very easy to prove, as the tube test shows beyond a shadow of doubt that it occurs only in the presence of moisture, and that the parting of the edges is accompanied by a rise in their level.

When we compare the *apparent* shrinkage in some alloys caused by moisture interference with the *real* shrinkage of the worst alloys known, the latter sinks into insignificance, and it is evident, if comparative tests are any use at all, that under favourable conditions a better plug, as regards adaptation, can be made with an alloy with considerable shrinkage than with an alloy which fails to retain its form.

We have here a proof that the specific gravity test alone is not reliable, as it does not show the most important property, and it is hard to see by what other than the tube test the cause of the lifting of amalgam plugs could have been discovered.

It is hard to see why an opinion should have been expressed at a recent meeting, that the tube-packing test should be abandoned, as there is at present no other test which will give the same information. Under any circumstances it cannot be abandoned by makers, as it is the only known one which can be applied as a guide in melting and discarding imperfect samples, which constantly appear in the manufacture of all alloys, however simple their composition.

The CHAIRMAN said with regard to the paper just read, he was struck with the fact of the porosity of one of their best amalgams (as regards durability) when properly packed, viz., the compound of mercury and copper. The question arose how far a small amount of porosity interfered with the durability of a filling; and again, whether the tests brought forward were tests of the permanence and durability of the filling themselves. However, they were very much indebted to Mr. Fletcher for a very interesting communication.

Mr. SEWILL pointed out that Mr. Fletcher omitted to state whether he used Diatoric or ordinary ink, because if it was ink having solid particles in suspension, it was extremely difficult to make it pass through a fissure unless the fissure was wide, and a test of that kind was valueless. He also demurred to the statement that a perfect filling could be made in a wet cavity.

Mr. TURNER said he believed it was Mr. Fletcher's

opinion that ink composed of water with colouring matter floating in it, and not in solution, was a sufficient test, and a fair representation of the saliva. He did not pretend to argue with Mr. Fletcher on matters chemical, but it seemed to him that the colouring matter, if only held in suspension, might be filtered, and still the fluid find its way between the walls of the cavity and the amalgam used. The more complex ink was the one which would most efficiently test any amalgam. In the saliva they not only had colouring matter floating, but a variety of substances, and certainly they had an acidity which was an enemy, not only to the amalgam, but to the teeth. He did not quite understand Mr. Fletcher's reference to Sullivan's stopping. It was a most useful article, and could be used sometimes where it would be almost hopeless to use any other stopping, and cases were continually coming under their notice in which it had been used thirty or forty years ago and was still existing. Why it should be so serviceable and yet be of this porous character he was at a loss to tell.

The CHAIRMAN then proceeded to lay before the Society an account of the work it had accomplished during the past year. Its most important object was the monthly gathering for the communication of new facts and the mutual interchange of ideas. The number of papers read during the year was ten, large in proportion to the number of their meetings, and had been eminently practical, assisting the practitioner not merely in his daily work, but enabling him more largely to extend the sphere of his usefulness to his patients. The first paper was by Dr. Rottenstein, of Paris, on "Dentifrices." Dr. Woodman came next with a paper "On the Occasional Occurrence of Symptoms of Poisoning, probably Dependent upon the Colouring Matter of Pink and Red Vulcanite." The discussion on that occasion went to show that such cases were extremely rare, but, as it was a subject of considerable importance, a committee was appointed to investigate and report upon any cases brought under its notice. At present no report had been made, no cases having been met with. Messrs. Ewbank and Charles Tomes favoured the Society with a record of experiments upon water-tight fillings with substances usually employed for filling teeth, and under conditions similar to those of the mouth. Then came a short paper upon an ingenious means for sustaining plates by atmospheric pressure, devised by

an American *confrère*, Mr. Hall, and termed "Hall's Suction Disc," followed on the same evening by a paper referring to the practice of "Dental Surgery in Egypt," by Mr. Waller and himself. He believed that, if a series of such papers could be obtained from different parts of the world, they would go far to clear their knowledge upon many difficult and abstruse questions. The subject of alloys had been very ably dealt with by Mr. Makins, and Mr. Hutchinson contributed a valuable paper entitled, "The Nerve Pulp in Life and Death." This subject was appropriately followed up at the next meeting by two papers, by Mr. A. W. F. Barrett and by himself. The last paper of the year was that to which they had just listened, from Mr. Fletcher. The casual communications had been especially interesting, and had dealt with a variety of subjects. A large number of valuable instruments and appliances had been brought under notice, and a large number of interesting cases had also been recorded. He congratulated the Society on the flourishing condition of its finances, its library, and museum. After referring in feeling terms to the death of their late President, Mr. Edwin Seacombe, he said he considered the chief event of the year was their having been presided over by a President of such scientific reputation and such great moral and social qualities as the gentleman whose period of office, elected President for the second time, terminated that night. (Applause.) Mr. Tomes connected them with everything good connected with their profession that had taken place during the last twenty-five or thirty years. Their best thanks were due to him for having once more shown his devotedness to their cause at personal self-sacrifice in again undertaking the office of President.

Mr. FLETCHER proposed a vote of thanks to the retiring President for his devotion to their cause, and more especially for his great urbanity and disinterestedness.

Mr. RYMER (of Croydon) seconded the resolution, bearing a high testimony to the part taken by Mr. Tomes in the fusion brought about between the two dental societies.

The resolution was carried by acclamation.

A vote of thanks having been accorded to the officers and council of the Society, the proceedings terminated.

The New York Odontological Society.

The New York Odontological Society met in the parlour connected with the Sunday-school room of Dr. Crosby's Church on Fourth-avenue. The President, Dr. A. L. Northrup, was in the chair, the Vice-President, Dr. Benjamin Lord, sitting beside him, and Drs. Jarvie and Carr officiated as Secretaries. There were present from other localities, in addition to those mentioned in yesterday's issue as having attended the evening session, Dr. Sage, of Bridgeport; Dr. Allen, of Newburg; Dr. Palmer, of Syracuse; Drs. Ham and Codman, of Boston; Dr. Jones, of Northampton; Drs. Darby, Huey, Guilford, and McQuillen, of Philadelphia; and Dr. McManus, of Hartford. Of New York dentists there were more than a hundred present. The assemblage was so large that the extensive parlour would not hold all, and nearly one-half seated themselves in the pews of the Sunday-school room, the sliding doors between being thrown open to make the communication as thorough as possible. Business commenced punctually at nine o'clock with the reading of the minutes, after which three papers were read, one on "Facial Neuralgia," by Dr. C. N. Pierce; the second on "Antiseptic Treatment of Dental Pulp and Pulp Cavity," by Dr. C. Spence Bate; and the third on "Necrosis," by Dr. William H. Atkinson. On the first two subjects there was very considerable discussion, not from any decided difference of opinion, but because very many of the gentlemen present had observed interesting facts in connection with the subjects. With regard to facial neuralgia the curious circumstance was elicited that in a vast preponderance of cases the cause of trouble was a diseased tooth. Illustration after illustration was given on this point, and anecdotes were related of surgeons who had gravely prescribed for patients all manner of tonic and alterative remedies, and had been astonished at the baffling character of the malady, with a final result of a visit to a dentist and subsequent relief. The second subject concerned local applications to prevent inflammation and swelling of the face. These two discussions occupied so much time that, when Dr. Dexter had finished the reading of Dr. Atkinson's paper on "Necrosis," the President announced that the time had come for adjournment.

At two o'clock the dentists re-assembled, though in reduced numbers, and proceedings were resumed by the reading of a paper on the "Chemistry of Dental Caries," by Dr. Palmer, of Syracuse. In this address he placed himself upon an electrical basis, and ascribed the changes of teeth as proceeding from electro-capillary forces resulting from the action of acids upon alkalies. It was a long and able paper, and necessarily called forth much discussion. One dental brother objected to the phrase electro-capillary, which he thought ought rather to be magneto-capillary, but the sense of the assembly evidently was that mere nomenclature was a secondary consideration, the first point being to see how far the facts were in accordance with the reader's theory. Dr. Flagg, of Philadelphia, was of opinion that there was much to corroborate him, and made a special hit upon the frequency of dead teeth, killed by gold filling, and the comparative rarity of such bad results from gutta percha filling, the one being a metal and liable to electric disturbance, the other a negative substance and not liable. It would not do,

he declared, to put the blame upon the filler, for he had in his office several bottles filled with teeth upon which the best operators in Philadelphia had practised their powers, and yet the teeth had died completely in two years. He was waiting to see when he should find similar results from gutta percha filling, which all first-class dentists had despised, or applauded merely as a good temporary substitute, and he had not found a single one. Some surgeons had talked of vital forces in connection with teeth. That was a door comparatively closed to him, for he did not know what those vital forces were, or how they operated, but it did seem to him as if the door of electricity was a little bit open. Dr. Kingsley said that possibly there was a constitutional idiosyncrasy, and that gutta percha fillings would be suitable for some and unsuitable for others. Dr. Buckingham, of Philadelphia, could not agree that all changes were the result of electricity. He did not doubt that electricity was always present where matter suffered a change, but did not accept it as the changing force, the *causa*. There were other forces besides electricity—for example, capillary forces. It could hardly be said that it was electricity which sent the blood coursing through the veins and circulating through the tissues. Electricity, or polarisation, was competent to build up crystals, but not to make cells of living organisms and give them assimilating powers. He strongly objected to Huxley's views of protoplasm, that it might either grow to a thistle or to a man. And he concluded by declaring, as there were many varieties of matter, so there were many forces. The writer of the article, Dr. Palmer, then rose to point out that certainly he had never declared electricity to be the only force, and that he did not think so. This would probably have closed the discussion had not Dr. Buckingham's reference to Huxley roused the ire of Dr. Atkinson, who rose in a tremor of scientific indignation and accused his dental brother of having misused the word protoplasm, and having given to it the meaning of the word germ, which it ought not to have, and never could have in any sense in which Huxley used it. Then he diverged to a consideration of the Huxley creed of protoplasmic appetency, and sat down after a brilliant explanation of the potentiality of matter. The Chairman, finding the subject exhausted, reminded the assembly that nothing had been said about necrosis, and declared it now ready for discussion. But nobody being willing to discuss it, Dr. Atkinson spoke concerning his own paper himself, making heavy strictures upon surgeons generally for their treatment of and dogmas concerning inflammation, and this in spite of many warning raps from the President's pencil at the unparliamentary and somewhat unkind mention of a cognate profession. The next paper was then read, on "Pressure and Contact as Causes of Dental Decay," by Dr. Henry D. Chase, and immediately afterward the next one, on the "Influence of Vital Force in resisting Dental Decay," was read also by the author, Dr. M. S. Dean. The assembly then adjourned.

The evening session was commenced at 7.30 with discussion of the two previous papers. This was followed by a paper on "Practical Lessons from Comparative Odontology," by Dr. Charles S. Tomes, and by another on the "Practical Results obtained with Plastic Fillings as compared with Theoretic Tests," by Dr. Thomas Fletcher. An animated discussion was held on the latter, and the meeting adjourned.—*American Paper*.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

DENTAL REFORM.

SIR,—I have watched, with much interest, the various expressions of opinion which have appeared in the journal in regard to the above question. I have long desired to see the mechanical so far separated from the surgical department of dentistry, that those practising the latter should not be, as many are now, literally the manufacturers of surgical instruments or appliances; and that there should be in all cases, as there are now in exceptional, surgeon-dentists and mechanical dentists. But I quite agree with those of your correspondents who have pointed out that it requires more than a mere mechanical training to prepare so delicate a portion of the human frame as the mouth for, and to adapt to it, a foreign material; and I moreover think it would be a source of distress to many possessed of refined and sensitive feelings were they to be informed that, for the future, they must seek aid for the supply of nature's deficiencies at the hands of persons holding no professional status. Whilst, therefore, I would maintain that it is quite as professional for the dental surgeon to prepare the mouth for and adapt it to receive an artificial denture or obturator as it is for a general surgeon—and especially an orthopædic surgeon—to see that a surgical instrument or appliance is properly constructed and adjusted, I must express the opinion that the former must greatly alter his arrangements in regard to fees charged for mechanical work if he insist upon assuming the professional status of the latter. As the matter now stands, it is the common practice to name a specified sum for a specified work, such as a set or partial set of teeth. The system is a very unjust one, though quite as often so to the dentist as it is to the patient, whose fees for mechanical work are but very moderate, if the number of visits and cost of the work be considered; but some patients give very little trouble, and are consequently charged too much; other patients give a great deal of trouble, and are charged too little; the strictly professional proceeding would be to charge for the visits, and, when the matter is completed,

hand over to the patient the bill of the mechanical dentist. If dental reform is to be carried out, and I sincerely hope such is in progress, let it be a thorough one; so that all who hereafter use the prefix of surgeon may be fully entitled to the status and the honour that name conveys.

I am, &c., ALFRED COLEMAN.

19 Savile-row, W., December 9th, 1875.

[To the Editor of the "*British Medical Journal*."]

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—I have been very much interested by your articles on advertisers, and am looking forward to seeing one before long upon newspaper advertisements, one or two of which I enclose.

It has occurred to me that these gentlemen might make their announcements very much more effective by clothing them in rhyme. Poetical advertisements are now, as a rule, chiefly used by tailors and barbers, but this is surely no reason why dentists in a large advertising way should not keep their own poet as well as any one else.

"Who cropped your crown?
Professor Frederick Brown,"

Would read very well as

"Who stopped your tooth?
Why Mr. Jones, forsooth.

and

"Trust your hair
To Baxter's care,
3d.,"

would be very attractive as

"Trust your jaw
To Tompkins' claw,
1s."

I mentioned the subject to our local poet, who has just sent me in the enclosed, as a specimen of his skill—"a taste of his quality," as you said last month—and says he shall be willing to supply any quantity at so much a dozen :—

"There was a young man of Redruth,
Who was terribly bored by a tooth
Till at last in despair
He resolved to repair
To a dentist—the friend of his youth.

"So he ran to the friend of his youth,
Who quickly extracted the tooth ;
And so skilful was he,
And so small was his fee,
That he charmed that young man of Redruth."

Yours faithfully,

Redruth, January 2nd, 1876.

DENS SAPIENTIÆ.

Legal Intelligence.

MAKING A SET OF TEETH WITHOUT AN ORDER.—At the Godalming County Court, on Thursday, *Eskell v. Anderson* was an action in which the plaintiff, a dentist, of Hanover Square, London, but who attends by his representative on Wednesday in every week to practice his profession in Guildford, sued the defendant, a lady, who, in partnership with her sister, carries on a boarding-school in Waterden Road, Guildford, to recover £14, the balance of an account for a set of teeth made and supplied to order.—Mr. Geach appeared for the plaintiff; Mr. Fulton, solicitor, instructed by a London solicitor, appeared for the defendant.—On the part of plaintiff, it was stated that the teeth were supplied at the stipulated price of £15. When the order was given, £1 was paid as a deposit and hence the amount sued for. A set of teeth was ordered at the same time by the defendant's sister, at a cost of £25. When the order was given £3 was paid on the two orders, being £2 for the defendant's sister and £1 for herself. The money was paid as a deposit, but when the set of teeth was nearly completed the defendant wrote and said she would have none made.—For the defence it was contended that the order was never given. A model of the defendant's mouth had been taken, but she distinctly said she would not have any teeth made until she saw how her sister's acted. When she found her sister's teeth pained her so much, she wrote and declined to have any made.—This was distinctly sworn to both by the defendant and her sister, and his Honor, without calling on the learned gentlemen engaged in the case, found for the defendant.—*The West Sussex Gazette*.

Notes from the Journals.

DENTAL NEURALGIA.—Dr. J. Sawyer says, in the *Practitioner*, “I have rarely found gelseminum fail to give decided and lasting relief in cases of neuralgic pains in the face and jaws, associated with carious teeth. I have usually given fifteen minims of the tincture every six hours.”

PERUVIAN BARK IN SORE THROAT.—Dr. Holden recommends the following formula, as exceedingly efficacious in diphtheritic scarlatina, and other forms of sore throat :—

R. Corticis Peruvianæ flav.	. . . . . 5ij.
Acaciæ pulv.	. . . . . 5j.
Sacch. alb.	. . . . . 3ss. M.

S. Mix one-half of this powder in a table-spoonful of cream, and apply frequently with a camel's-hair brush.

THERAPEUTIC ACTION OF CHLORATE OF POTASH.

In a long paper devoted to this subject, M. Isembert observes that it is now evident that the chlorate is without action on true gangrene of the mouth, and that Hunt committed an error of diagnosis in confounding noma with certain forms of foetid ulcers—membranous stomatitis—for which it is acknowledged on all hands to be almost a specific. But what, he asks, is its mode of action? It is a topical agent, which, when absorbed, re-appears in the saliva, and therefore is continuous in its action; when ineffective, enough has not been given, and a cure can be effected by applying it directly in a concentrated form. In mercurial stomatitis the chlorate is extremely serviceable, though less certain. The explanation of this is, that every foreign body which is eliminated by a gland modifies its secretion, and this modification may perhaps be an exaltation of the vital properties of the secreting organ which carries off with it the morbid state. The chlorate does not appear to have been found useful in scurvy. It is very serviceable in the simple glandular or ulcerated forms of angina, though it cannot be regarded as a specific. In croup it has not realised the hopes that were at first formed in respect to it: it has proved valuable as a topical agent in different kinds of chronic coryza, and M. Laborde has recently pointed out its usefulness as an expectorant and as a succadaneum to kermes in chronic bronchitis and broncho-pneumonia when on the decline. It certainly has not the contra-stimulant properties of the antimonials, but it facilitates the excretion of bronchial mucus, and it has the

advantage of stimulating the appetite. Atonic ulceration of the skin, phagedænic ulcers, and foetid wounds, are often favourably modified by the external application of the chlorate in concentrated solution, but its action appears to be inferior to that of iodoform in this respect.—(*Gazette Médicale de Paris*, Oct. 23, 1875.)

THE PHYSIOLOGICAL ACTION OF ARSENIC.

A student named Kossel undertook a series of researches in the Physiological Institute at Berlin, upon the influence exerted by cautiously increased, but ultimately fatal, doses of arsenic, upon the economy of dogs, but having to leave Berlin before they were completed, Gähtgens continued them, and gives the following as the results obtained:—The occasion of the research was the remarkable parallelism which exists between fever (pyrexia?), diabetes, and poisoning with phosphorus in regard to the occurrence of remarkable increase in the disintegration of tissue albumen, in Voit's sense of the word. Poisoning by phosphorus is characterised in addition by the deposition of fat in the tissues of various organs, which also appears to occur after the use of arsenic and antimony. From an anatomical and pathological point of view the action of arsenic must be regarded as analogous to that of phosphorus, to which it presents so many points of analogy. If the ordinary view be accepted, that the fat is formed from the contents of the cells (of the peptic, hepatic, renal, canalicular cells) the question arises, what becomes of the nitrogenous constituents of these cells? To afford an answer to this question a dog, weighing 44 lbs., was insufficiently fed for fifteen days and then completely deprived of food, whilst arseniate of soda was administered by means of a sound. The experiment was continued for ten days, and careful examination was made of the urine and fæces. The result of this showed that the albuminous substances did probably undergo disintegration and that the nitrogen was eliminated in the form of urea which underwent considerable increase.—(*Centralblatt f. d. Med. Wiss.* No. 32, 1875.)

GELSEMIUM SEMPERVIRENS AS AN ANTI-NEURALGIC.

Dr. A. Jurasz, of Heidelberg, having had his attention drawn to the effects of this drug in cases of neuralgic toothache, as detailed by Wickham Legg, and Sawyer, proceeded to try it in various cases of neuralgia, and corroborates the results obtained by those observers. The tincture was usually employed in doses of from five to twenty drops. The first

case was that of a man who suffered from neuralgia of the first branch of the fifth nerve on the right side. Quinine was given internally, and veratria ointment was applied externally, without benefit. The action of the gelsemium was here excellent, the patient being perfectly and permanently freed from his pain in the course of three days, five drops only being given every eight hours. A second case was one of brachial neuralgia, a third of severe sciatica, and a fourth and fifth of trigeminal neuralgia, in all of which the results were satisfactory. On the other hand, however, it failed in a case of hemicrania of long duration, and in two cases of muscular rheumatism.—(*Ibid.* No. 35, 1875.)

Gelsemium. Dr. O. Berger (*Contrablatt*, No. 44, 1875), on the other hand, states that the results of experiments with this drug on patients, both the tincture and extract being used, have been in the highest degree unsatisfactory. The greater number of the patients were the victims of trigeminal neuralgia, partly of peripheral and partly of centric origin, whilst others suffered from neuralgic pains in different parts of the body, and insomnia. He quite admits that the remedy possesses considerable activity, various unpleasant symptoms having been experienced by the patient, as vertigo, diplopia, ptosis, difficulty of moving the tongue, stiffness and trembling of the hands, numbness of the fingers, chilliness and general malaise, vomiting, and last, though not least, dyspepsia. Even when the doses did not exceed seven grains of the extract.

Notices and New Inventions.

WE have much pleasure in calling the attention of the profession to a new and remarkable amalgam. Mr. W. Charles Davis, of Bristol, the inventor of this "Malleable and Quick-setting Gold Amalgam," has just furnished us with a sample, and from the few experiments we have carried out with it, we are satisfied that, so far as we can now judge, it will be a highly valuable material for filling carious teeth.

The property of malleability is its special characteristic. A flat pellet, one-eighth of an inch in thickness, we beat

out to three times its original diameter; it could then be cut with a knife, and a soft tough shaving produced—resembling a shaving from a piece of lead similarly treated. A cavity in a tooth was filled and the surface burnished; a part of the plug was deeply cut away at one edge, exposing the wall of the cavity. By malleting with smooth points we successfully wrought over the more central part of the plug, and filled up the cavity we had made, and then burnished the surface of the filling.

In amalgamating the alloy, it is recommended to add an excess of mercury over the quantity generally used with ordinary amalgams, so that the mixture may be quite thin; nevertheless, the plug becomes sufficiently hard in one minute to bear burnishing, and in a little time longer its malleability and toughness become more marked.

In virtue of these properties it can be inserted into a tooth and malleted in a few minutes, or at the lapse of a few days after it has been placed in the cavity. Thus, any shrinkage which takes place can be overcome. But whether any shrinkage and alteration in the shape of the plug which has been malleted takes place, we have not yet had an opportunity of ascertaining.

So far as our experience with this amalgam has gone, we can recommend it to the profession with considerable confidence; desiring, however, to be deliberate before we give an absolute judgment upon a preparation that requires time, experience, and observation for its properties and utility to be known.

SPÉCIALITÉ SHERRY.—We have been much pleased with the sample of the Spécialité Sherry submitted to us. It is a light, palatable wine with an agreeable taste, and contains

just sufficient stimulating power to render it very useful in those cases where a patient requires a restorative. We can cordially recommend it to the profession, and predict for it a large sale.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	—————
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

PATHOLOGY IN THE LION.

According to Mr. Lund, of Manchester, in an address recently published, a very curious pathological condition occurs in the lion under certain circumstances. It appears that it was observed in the collec-

tion of animals of the Zoological Society of London, that a certain lioness, always breeding with the same lion, gave birth on several occasions to lion cubs with cleft palates, and the probable cause was for some time in doubt, such deformity being rare among the lower animals. At last it was noted that this animal, in common with the other carnivora, was fed on lean meat cut clear from the bone, and it seemed probable that the deficiency of growth was due to the absence of bone-food. The idea was acted upon the next time this lioness was in cub. She was fed freely with meat still attached to the bone, and bones were left in the cage to be gnawed by her at pleasure. The result was that in the next litter all the cubs were perfect, and the ordinary defect was removed by this modification of the diet,—*Medical Examiner*.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM DECEMBER 1ST TO DECEMBER 31ST, 1875.

Extractions.	Children under 14	-	-	-	-	-	-	253
	Adults	-	-	-	-	-	-	430
Under Nitrous Oxide	-	-	-	-	-	-	-	139
Gold Stoppings	-	-	-	-	-	-	-	149
White Foil ditto	-	-	-	-	-	-	-	36
Plastic ditto	-	-	-	-	-	-	-	186
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	-	-	52
Miscellaneous Cases	-	-	-	-	-	-	-	150
Advice Cases	-	-	-	-	-	-	-	99
Total .								1494

JAMES MERSON, *Dental House Surgeon*.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of MESSRS. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall.

All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE Monthly Review OF DENTAL SURGERY.

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The Rev. Sir EDWARD REPPS JODRELL, Bart.

To Messrs. FELTOE & SONS, 27 ALBEMARLE-STREET, W.

When at Sall I received an Analytical Report of your SPÉCIALITÉ SHERRY, and you must forgive me for saying that at first I regarded the whole matter as a most egregious piece of humbug. Having, however, tasted the wine in question, and found it most agreeable to the palate, I determined, on my own responsibility, to have it analysed for myself, having fully also determined previously to expose any hoax *pro bono publico*, or to give you the benefit of the Analysis should it turn out in your favour. I have the pleasure to forward to you Professor Redwood's (of the Pharmaceutical Society of Great Britain) Analysis, which says more than I can express. I am very particular as to the wine I drink, and as I have been hitherto buying every-day Sherry at 60s. a dozen, I am rejoiced to find now that I can purchase wine of equal strength and superior bouquet at half that price. This should be known to the general public, and you can make any use you deem proper of this letter, and also of Professor Redwood's most elaborate Analysis.

Yours faithfully, (Signed) EDWARD REPPS JODRELL.

THE "SPÉCIALITÉ" SHERRY.

(REGISTERED).

"It has ATTAINED and DESERVES a great MEDICAL REPUTATION."—Medical Record.

"Founded on its FREEDOM FROM ACIDITY AND HEAT."—British Medical Journal.

"To the meal of a patient suffering from DYSPEPSIA it would be VALUABLE."—Medical Times.

"FREE from the ACIDITY commonly found in SHERRY."—Public Health.

"A PALE SHERRY of LIGHT CHARACTER AS REGARDS THE ALCOHOL."—Medical Press.

"FREE from MINERAL ACID or INORGANIC MATTER not yielded by Grape-Juice."—Professor Redwood, Analyst to the Pharmaceutical Society of Great Britain.

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"UNADULTERATED GRAPE JUICE."—United Service Gazette.

"THE OLD-FASHIONED NUTTY FLAVOUR."—Court Journal.

"A GENUINE WHOLESOME FLAVOUR."—The Freemason.

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30s. per Doz. £18 per Quarter Cask.—CASH ONLY.—Carriage Paid.

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THE MONTHLY REVIEW

OF

DENTAL SURGERY.

NO. IX.

FEBRUARY, 1876.

VOL. IV.

The Functions of the Odontological Society.

A general impression prevails that the Odontological Society of Great Britain, by virtue of its constitution, cannot take political action on behalf of the Dental profession. How this feeling has originated it is difficult to say, unless it is to be assigned to the "rest and be thankful" spirit which has been the chief characteristic of the Society during the last ten years. Recent events have demonstrated the fact to every unprejudiced mind that the Representative Body of Dental Surgeons in this country can neither ignore nor reject its political responsibilities. The Royal Medical and Chirurgical Society, as well as the Obstetrical Society, have never hesitated to take political action whenever it has been necessary in the interests of its Fellows. Why the Odontological Society should by its inaction have repudiated similar responsibilities we are at a loss to understand. The members of the Dental profession have from time to time looked in vain to a Corporation that would guard their professional interests and advance their political position.

The large meeting in Manchester, and the small meeting in George-street, Hanover-square, cannot have surprised those who have carefully studied the "signs of the times."

Political progress and social position must always advance with material prosperity, and the action of the two extreme parties to which we have alluded show at once the weakness and the strength of the great body of Dental Surgeons in the present day. On the one hand, the holders of high-class surgical qualifications, and on the other hand, the representatives of numerical strength, must inevitably fail in their endeavours after reform so long as they remain in antagonism to each other. If each party would but have the courage to be candid, we should find that the Members and Fellows of the College of Surgeons felt the want of numerical strength whilst the large majority of unqualified dentists aimed at the possession of some legal status. With interests so apparently opposed, yet really in unison, it is clear that unanimity can only be arrived at by mutual concessions. A profession that is but now emerging from surgery on the one side and self-estimated competency on the other, cannot afford to be divided in its councils. If the present position of Dental Surgery has one feature more strongly marked than another, it is that the old order of things is passing away and giving place to a new one. It would be but a thankless task to point out the shortcomings of the two movements towards Dental Reform that have been recently inaugurated; we would rather indicate the manner in which all sections of the profession may act together without any sacrifice, either of independence or self-respect. Maintaining, as we do, the political character of the Odontological Society, we would urge upon that body the desirability of holding a Conference of the entire Dental Profession, and taking counsel even from those who are not officially connected with the Society, as to what measures can be adopted to promote the professional and poli-

tical position of Dental Surgeons. The Annual Dental Dinner that is to take place next month will attract a large number of practitioners to London from all parts of the country, and thus afford a convenient opportunity for holding the Conference we have suggested. Such a meeting, called together under the auspices of the Odontological Society, would command both attention and respect, whilst the opportunity for the free interchange of opinion would most effectually break down class feeling and party-prejudice. The President of our Society has commenced his year of office with a declaration, showing at once intelligent independence and thoughtful consideration for the views of those who differ from him. By presiding in his official capacity over a thoroughly National Conference, he would render his year of office memorable in the history of dentistry, and earn the lasting gratitude of those who desire the progressive development of Dental Surgery.

The Odontological Society cannot repudiate its political responsibilities ; the President, we are well assured, will not shrink from carrying out the onerous duties of his office ; it remains with the members to be seen whether they are prepared to use the Society for its legitimate purpose, or remain quiescent in a selfish and inglorious apathy.

The New Dispensation of Dentistry.

The historian has always dwelt with peculiar interest on the obscure origin of great movements. The starting-point of many a noble faith has been humble in the extreme, and poetry has exemplified this truth in many a well-known line. Dentistry is to be elevated by a new faith—a faith revealed in the neighbourhood of Hanover-square, and—tell it not

in Gath neither publish it on the walls of Ascalon—to be devoutly proclaimed in Lincoln's Inn Fields.

It appears that on a recent occasion twelve highly-respected dentists—Members of the Royal College of Surgeons—assembled together at night—not for fear of the Jews—but to partake of a repast very unlike the ordinary apostolic food. In spite, however, of the Clicquot and the Lafite, “the feast of reason and the flow of soul” resulted in a new revelation. It was discovered that it was urgently necessary to breathe a new life into the science of dentistry. This was to be done by establishing a Dental Society, the portals of which could only be passed by those invoking the consecrated hieroglyphs, M.R.C.S. The unselfishness and simplicity of those founding new faiths has always greatly assisted in the promulgation of their doctrines, and we are not surprised to hear that the devotees have determined to abandon the large profits of mechanical dentistry to surgical-cutlers, or at least to the authors of “the gentle treatment.” We do not know whether the “spiritual” and highly-qualified dentists will still condescend to enlighten the Odontological Society with the learning acquired through their connection with the Royal College of Surgeons, but should so many stars of the first magnitude be removed from the firmament of ordinary dentistry, the Odontological Society will be totally eclipsed, and there will certainly be a “darkness over the land” of vulgar tooth-extractors. At the recent meeting one of the younger apostles, who, we believe, according to the motto of his College, is both “holy and wise,” was restrained with great difficulty from resigning a lucrative lectureship where a large number of dentists are trained for the L.D.S. Like the humble fishermen of old, such was his faith that he was determined to abandon his nets—to

retire from his Professorial Chair—rather than abet the present heathen practices.

The new doctrines are already spreading, and, like the Puritans of old, with a view of “purging themselves,” we learn that several well-known dentists, possessing the dental diploma of the College of Surgeons, have determined to renounce all private practice until their skill in all the ordinary branches of surgery has been approved by the worthy examiners in Lincoln’s Inn Fields. One dentist possessing the L.D.S., whose practical work is generally considered to be excellent, but whose age is nearly 60, has determined to enter immediately as a student at the nearest hospital. As it will be four years before he can obtain the Membership of the College of Surgeons, we think that the apostles should at least receive him into their communion *pro tem*. We feel sure that the important meeting in George-street will not prove an illustration of “Much ado about nothing,” and we shall look forward with great interest to the Transactions of the learned Society so recently established.

The ‘Medical Examiner’ on Dental Reform.

The history of specialism in medicine illustrates the successive decisions of the various parts of the body-corporate, and the subsequent evolution of these parts, with more or less perfection. As in most cases of natural development, there have been some abnormalities in the process. The most important subdivision, or section, appears to have arisen by a process of spontaneous generation before medicine existed even in the most primitive form. Surgery was, no doubt, the earliest speciality. “When wild in woods the noble savage ran,” he probably made efforts to obtain relief from the effects of injuries inflicted either by accident or design, whilst, for a very long period, internal disease was looked on as something beyond human means. At all events, it is certain that at a time when the Egyptians were employing useful surgical instruments, their system of medicine was still founded on astrology and practised with incantations. It was not till the middle of the 12th century that medicine was elaborated by the Arabian school to an independent position, nor till a later time that it was dignified by an association with philosophy and priestcraft. It

is comparatively recently that obstetrics was taken out of the hands of ignorant midwives and became a department of medicine of the highest value, and it is in the memory of some still living when the eye was disengaged from general medicine. Still larger numbers of us can recollect Laennec's invention and the subsequent specialisation of chest diseases. The last few years have seen the skin, the throat, the ear, the liver, the stomach, the kidneys, the nervous system, almost every organ, and almost every class of diseases parcelled out, with more or less distinctness, to different sets of practitioners. These various classes of specialists, as a rule, treat only the more intractable forms of disease, or, at least, those which have resisted ordinary measures. The general practitioner, whose "knowledge of the patients' constitution" is a great deal more than a phrase, is able to cope successfully with a large number of "the ills that flesh is heir to;" but, practically, there are now in London four classes of practitioners, viz., about half-a-dozen general physicians, 100 operating surgeons, 500 specialists, and about 2,500 general practitioners. For better, for worse, such is our general organisation. It will be seen, that with the exception of Surgery, which existed, *ab initio*, the other specialities have been taken from general medicine.

There is one speciality, however, which, like its prototype, surgery, was abnormally developed, and came into existence at a very early date, and also, like the art of surgery, arose quite independently of medicine. In the Augustan age the science of dentistry had attained a high degree of perfection, and though, in mediæval times the blacksmith extracted teeth, it must not be forgotten that the barber practised surgery. In the nineteenth century dentistry has, perhaps, made greater progress than any other department of practical surgery. A large number of dentists are men of high culture, keen intelligence, and varied accomplishments, yet it cannot be denied that, as a class, dentists do not hold the same social position as other practitioners, as other specialists—oculists, dermatologists, chest-doctors, &c. The cause of this is, no doubt, to be found in the fact that the other specialists are first thoroughly educated in general medicine, and, indeed, most frequently engaged in general practice before they become specialists. The independent origin and position of dentistry is, no doubt, in a great measure responsible for this state of things, but there are other causes in operation. The teeth, though still very useful organs, have lost the high value which they once possessed, as weapons of attack. They are of less importance than any of the organs of special sense, except the nose. They are not essential to existence, like the narrow portal of "the breath of life," or the great internal organs. Hence people, who make the most careful inquiries before consulting a doctor, will go to any dentist—often the nearest. The public are not yet prepared to take the same precautionary measures to discourage quackery in dentistry, which they have done by Act of Parliament with reference to surgeons. Hence dentistry is often practised as a trade instead of a profession, and many persons well adapted to be cheap photographers, purveyors of ready-made clothes, hangers-on of the Stock Exchange, &c., whose sole qualification to practice consisted in unblushing effrontery, have crowded into the *business* of dentistry. It is this which makes the great difficulty in "levelling up" the dental profession. Free-trade in dentistry having failed, it

remains to be seen whether State agency can place this speciality on a level with the other departments of surgery.

Under these circumstances, we are not surprised that a few eminent members of the dental profession have united together to devise a scheme for raising their speciality to a more worthy position. Fourteen gentlemen, we believe, recently met at the house of a dentist who has proved himself an inventive surgeon of a very high order. The creative brain, however, which could devise a clever apparatus to catch a vesical calculus, was unequal to conceive a comprehensive measure of dental reform. Instead of proposing a broad scheme of medical tuition for dentists, instead of insisting on a more thorough training in general education, all that was proposed by these gentlemen was that a select society should be formed, consisting only of those dentists possessing the Membership of the Royal College of Surgeons. The effect of such a policy—if it has any effect at all—will be to alienate a large class of clever and highly-respected dentists from Lincoln's Inn Fields, and to lead them to establish or re-establish a College of Dentists. We sympathise with the objects of the *élite*, but we feel that their course of action is calculated to do great harm to dentistry. The improvements which have been introduced into modern dental practice have created a trade element in this department of the profession, which has greatly increased the profits of dentists. Are the reformers going to renounce the gains of mechanical dentistry, and hand them over to the surgical-instrument maker? Such a course on the part of any one of them would indeed be worthy of a Roman dentist—some time before the Augustan era. At all events, let us have a comprehensive scheme which will gradually elevate the whole dental profession to a level with that of other departments of surgery, not a narrow eclecticism which, though it may flatter the *amour propre* of a few, will promote jealousy and ill-feeling, probably excite ridicule and distrust, among the many.—*Medical Examiner*.

The Month.

THE ANNUAL DENTAL DINNER AND THE ODONTOLOGICAL SOCIETY.

We are authorised to state that there will be a meeting of the Odontological Society on the evening preceding that on which the Annual Dental Dinner is held. This will be in addition to the ordinary monthly meeting of the Society, that takes place as usual on the 6th proximo.

MR. VASEY'S CONVERSAZIONE.

The conversazione given at the private residence of the President of the Odontological Society was in every way a great success. Gentlemen from all parts of the country attended, and not only was it the occasion of a pleasant social evening, but also served the purpose—

most useful in the present agitated condition of the profession—of affording an agreeable opportunity for the interchange of opinions and sentiments on the numerous questions just now coming to the fore.

MR. TOMES, F.R.S.

WE are glad to learn that Mr. Tomes is still improving in health. We trust it will not be long before he is again able to attend the meetings of the Odontological Society.

A NEW DENTAL SOCIETY.

A meeting was held on the 19th ult., at the house of Mr. W. D. Napier, in George-street, Hanover-square, at which it was decided to form a new Dental Society, consisting exclusively of Fellows and Members of the College of Surgeons. The name of the proposed Society, together with the necessary details, are to be considered at a meeting to be held at Mr. Cartwright's house in Old Burlington-street, to-morrow (the 16th inst.) The opinion of the Medical press upon the matter appears to be, on the whole, unfavourable to the new Association.

ROYAL COLLEGE OF SURGEONS.

At the recent examination the following gentlemen were found qualified, and admitted Licentiates in Dental Surgery, viz. :—

Adams, Frank Haydon, Budleigh Salterton, South Devon.
Burrows, Walter Shoppee, New-road, E.
Gartley, John Alexander, Sackville-street.
Halliday, Middleton Wood, Nottingham-street.
Jewers, Ernest Edwin, Plymouth.
Sayles, Francis Austin, Margaret-street.
Strickland, Frank, Boundary-road, N.W.
Woodruff, William Herbert, Leamington.

Five candidates failed to acquit themselves to the satisfaction of the Board, and were consequently referred to their studies for the usual period.

LIGHT.

Light being one of the most important considerations to any one practising dentistry, the profession must have been much interested in the recent action brought by Mr. Cartwright. Without going closely into the merits of the case, we very heartily wish him success before the arbitrator to whom the matter was referred.

DENTAL ADVERTISING.

THE articles upon Advertising that have appeared in this Journal will shortly be reprinted and published in a separate form, enriched with sundry "Curiosities of Literature." Orders can be sent to Mr. Butcher, 4 Crane-court.

AN interesting relic of pre-historic London, the massive lower jaw-bone of an hippopotamus, with its tusks and teeth, lately exhumed from a depth of forty feet, was exhibited at the rooms of the British Archaeological Association, 32 Sackville-street, on the 2nd of February.

THE 'MEDICAL PRESS AND CIRCULAR' ON THE NEW DENTAL SOCIETY.

An attempt is being made by certain dental surgeons to start a new dental society, to which none but those holding recognised qualifications shall be admitted. Some of the objects of the society are "a closer association of the more highly-qualified members of the profession, the formulation of an improved code of etiquette, the abolition of that advertising system which does so much to degrade the calling, and generally the elevation of the status and *morale* of dentists" (*sic*).

In the first place, we would remark that it is a pity when a body of gentlemen put themselves forward as models of professional culture they do not take more care that the language which they use does not contain gross errors in grammar, since such errors may perhaps lead the uninformed to suspect an absence of the superiority to which they lay claim. In the next place, we do not hesitate to say that the new society is quite uncalled-for, can do no good, and, on the contrary, must injure the profession by weakening the power of the Odontological Society, which comprises all the eminent members of the profession, and which is doing all that is possible to advance dentistry. We strongly advise the promoters of this new society to abandon their scheme, and, instead of holding aloof, to work loyally and heartily in the Odontological Society, to which they and their Profession already owe so much.

Advertising. No. 4.

Assuredly this is an age of progress. "Live and Learn," though a somewhat trite adage, is yet pregnant with meaning. Appreciating to the full the dictum of the great arch poet of society,—*"The proper study of mankind is man,"*—we have always considered that *"The proper study of the*

Dentist is the Teeth." We have hitherto fondly imagined that the duty of a member of our profession was concerned in the extraction and stopping of teeth, the replacing of lost teeth with artificial ones as like as possible to those that were "gone before" (in which branch we may appropriate, with the alteration of one word, the lines written under one of Shakspeare's portraits :

" Wherein the 'dentist' had a strife
With Nature—to outdo the life,")

and generally to treat those portions of the human frame connected with teeth, jaw, and palate.

But we were wrong, and we hasten to acknowledge both our error and the source of our correction. In a lengthy notice that appeared in the *Daily News*, one day last month, entitled "The Mysteries of Dentistry," and of which we will only say, that while its position is the position of an article of news, its type is the type of an advertisement, we learn that "popular instruction" must also be considered a part of the dentist's avocation. The gentleman with whose business the "Mysteries of Dentistry" are solely concerned (and to say that it "damns him with faint praise," will hardly express the laudatory tone of the writer) "sends out," we learn, "to all parts of the kingdom, gratuitously, hundreds of thousands of useful little books setting forth all necessary information concerning the functions and diseases of teeth, with good practical advice, and quite a little book trade is being carried on in what we may designate the publishing branch of the establishment." "The Mysteries of Dentistry" has also appeared more than once in the *Christian World*.

"It is never too late to mend," and, with this information to guide us, we procured a copy, not only of the "useful little book" alluded to, but of sundry others published by dentists in the metropolis, and have at this moment nine volumes before us of various sizes and colours, and with titles ranging from the modest "Few Observations on the Teeth" to the more ambitious "Progress of Dental Surgery."

Though differing externally, there is a wonderful similitude as regards the contents of these "useful little books," the most notable point of resemblance being that, with one or two exceptions, the public get them for nothing. We are almost at a loss to know which to begin with in the short review we propose to make of them; but, inasmuch

as in one of them, we find a testimonial from a gentleman calling himself "By appointment, Surgeon-Dentist to the Queen," we think it should have the post of honour.

This is entitled "Painless Dentistry, and is by Mr. G. H. Jones, Dental Surgeon, Doctor of Dental Surgery," etc., etc. The preface is couched in somewhat strong language, but we cordially agree with the remarks upon the unqualified "would-be dentist," and shall indeed be glad if the book itself, to quote the author's own words, "prevent many persons from falling into unprincipled hands." Noting the observation that "the time is come when we cannot refuse to listen to the teachings of Science," we rush eagerly on to read the work itself, noticing *en passant* the very satisfactory assurance "by way of addenda that being in constant communication with the leading Scientific Societies of Great Britain, the Continent, and America, the author is duly advised of every improvement in Surgical and Mechanical Dentistry." The first twenty pages of the treatise consist of some eighteen chapters professing to deal with the various functions and disorders of the teeth, and concludes with one upon cleft-palate, the work finishing with "Extracts from Opinions of the Press." The book being professedly written for the unprofessional reader, we are almost surprised to see that the remarks are hardly so lucid or instructive as we should have expected. Space will not allow us to give more than one instance, which is, however, a fair example of the writer's simple style:—"The process by which the saliva is ejected is by the trituration and friction of the food during mastication acting upon the Parotid, the Sublingual, and the Submaxillary glands, causing irritation of the Superior and Inferior Maxillary nerves, which produces spasmodic contraction of the cellular tissue of the glands." With a laudable desire on the part of the author to be amusing as well as to display his learning, interspersed, among the "teachings of Science," are references to the Prophet Amos, Herodotus, early German and French writers, and quotations from "Hamlet," Hood, "Old Merry's Monthly Memoranda," etc. No opportunity is lost, in this useful little book, of alluding to the writer's house, of which an illustration is given as a frontispiece, and the extracts and notes generally refer to his various patents and peculiarities, whilst with a "prophetic soul" foreseeing that there was a faint chance of the reader becoming "weary,"

the last paragraph contains an apology for "lack of information" and a "respectful" intimation that "the author may be consulted at his only address from ten till five daily." What a combination!

"Happy are we that have so bold a man."

The space devoted to extracts from the Press contains, also, sundry testimonials, foremost among which is the one we have alluded to above, and as regards which we would quote a reply we made in the second number of this journal, in answer to a correspondent inquiring about some firm announcing themselves as "Surgeon-Dentists to the Royal Household." We then said, "Mr. Edwin Saunders is the dentist to the Queen and Mr. Edwin Truman dentist to the Royal Household. We do not know by what right Messrs. Moseley lay claim to the latter office." We have referred to the list of officers in the Royal Household for this year and find no other names than those of the two gentlemen just named. It would be interesting, therefore, to learn something more of Mr. Hutchings and his "appointment."

Of the "Opinions of the Press" themselves we will content ourselves by alluding to but one, and that purports to be from the *Globe*:—"The author boasts one benefit at least he has helped to confer on his country, by being the first to adopt and introduce nitrous-oxide for the painless extraction of teeth." We were not aware that we owed so much to this gentleman, but presume "It must be true, 'twas in the papers."

Space will not allow us to notice in detail the several other treatises before us. Most of the observations we have just made will pretty generally apply to all. We do not deny that some of them contain a slight amount of information about teeth that may be of use to the public, such as recommending cleaning at night and morning, and the importance of attending to children's teeth early in life. But the authors generally make too great a display of their profound knowledge, and we fear that the unfortunate reader of one of these "useful little books" must be sadly confused when he lays it down between—caries—bicuspid—nitrous-oxide—orris-root—œsophagus—anæsthetics, and the like. These gentlemen should remember that "a little learning is a dangerous thing," and be careful of letting the public into their secrets. One of them very kindly says, "from my

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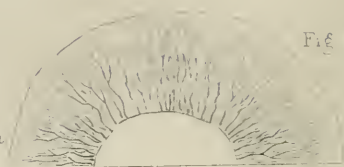


Fig LXXXV

Fig. LXXXIII



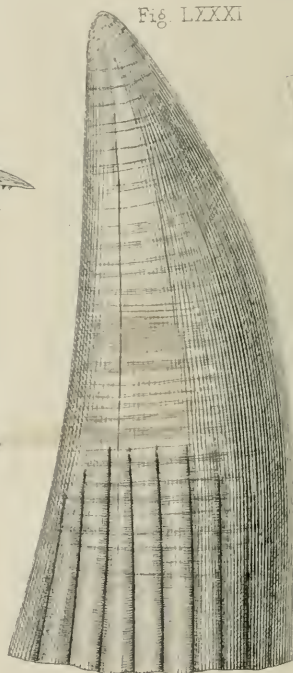
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Fig. LXXXII.



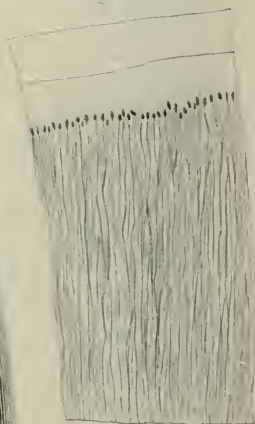
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Fig. LXXXI

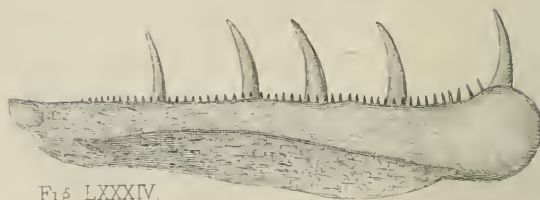


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Fig. LXXXI



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Fig LXXXIV.

wish to be sparing of even seeming technicalities, I have here, as wherever possible throughout this essay, made use of the most familiar English expressions," but we regret to say, that all the writers are not equally thoughtful of their reader's powers of understanding.

Most of the works carefully let the public know at what hour their authors are at home for consultation; many of them announce "half price" to "servants," "persons in business," etc., and nearly all profess to hold "consultations free." In very many, too, the prices are quoted for artificial teeth, from "a single tooth" to an "entire set," though the fees for extraction and other operations are not generally stated. Cures for aching teeth—recipes for tooth powder—suggestions for mouth-washes—there is no lack of, while the "comfort of society," the "good of the public," and the "dispelling of prejudice," are the causes that induce the writers to put themselves to the trouble and expense of compiling their books. One of the most singular facts in connection with the books we have been noticing is, that with one exception, not one of their authors appear in the Medical Directory as holding the only recognised qualification in this country, viz., the Diploma of the Royal College of Surgeons. We are at a loss to account for this except by the supposition that, having so much to do in teaching others, they really have no time to think of themselves; and, while cautioning the public against unqualified dentists, forget that they themselves may be included in the same category.

On the Microscopical Structure of Fossil Teeth from the Northumberland True Coal Measures.

By W. J. BARKAS, M.R.C.S.E., L.R.C.P., Lond.

CHAPTER XIX.

(Continued from page 256.)

Sub-family.—Glyptodipterini (Huxley).

The Glyptodipterini are fairly represented in the Northumbrian coal measures, and chiefly by their teeth; in fact the genera of this sub-family, abound in greater number in that formation than do those of any other of the Crossopterygidean sub-divisions. The general characters of the Glyptodipterini are very similar to those of the Saurodipterini, the

main distinguishing point being, that the scales and head bones of the former sub-family are sculptured, while in the latter we have seen that they are smooth. These fishes are described by Professor Huxley as having the following characteristics:—Two dorsal fins; acutely lobate-paired fins; principal and lateral jugular plates; no branchiostegal rays; large teeth with grooved bases; sculptured scales and head-bones; three occipitals; large distinct parietals and equally distinct frontal bones; tail, diphyccercal in some of the genera, and heterocercal in others; scales occasionally rhomboidal and sometimes cycloid. Fishes presenting these characters have been further sub-divided by Professor Huxley, into:—First, rhombiferous Glyptodipterini, and second, cycloferous Glyptodipterini; the first sub-division is characterised by the fishes possessing diphyccercal tails, and being generally covered with rhomboidal scales—of this branch, however, there are not any representatives in the Northumberland coal measures, judging from our present acquaintance with the fossil remains of that formation; the second is distinguished by its fishes having heterocercal tails and cycloid scales—it is to this sub-division that the fishes pertain to which I shall now direct your attention.

Genus.—*Rhizodus* (Owen).

Concerning this fish very little is known with any certainty; it has never been found intact nor have its supposed bones been discovered together with any degree of frequency, in fact, to speak strictly, we only know its teeth, scales and premandibular bones; the pectoral arch and fin-rays have been found associated with one of the teeth, and they have, therefore, been conjectured to be parts of the same fish; this slab is in the possession of the Natural History Museum of Edinburgh, but before this conjecture can be accepted we must have much further evidence. Mr. Atthey described, in the sixth volume of the Transactions of the Tyneside Naturalists' Field Club, various bones which he considered to belong to *Rhizodus*, because they were frequently associated with teeth that he supposed to be teeth of *Rhizodus*; later researches, however, have shown that these supposed *Rhizodus* teeth were really the teeth of a Batrachian called *Loxomma*, and as a consequence the supposition that these bones pertained to *Rhizodus* must also be erroneous.

To repeat, then, the only remains that we are acquainted with are the teeth, premandibular bones and scales.*

This genus was founded by Professor Owen upon certain teeth that were designated *Holoptychius* by Agassiz, and *Megalichthys* by Hibbert; the latter name was soon seen to be a misnomer, for these teeth did not at all resemble those of *Megalichthys*; the title *Holoptychius* was, therefore, the one generally accepted by palæontologists, and it was while examining the teeth of the different species of that genus that Professor Owen noticed that some of these teeth did not possess all the ordinary characters of undoubted *Holoptychius* teeth, he therefore raised them into a separate genus. In course of time these teeth were found associated with certain scales that bore out Professor Owen's idea as to the difference between *Rhizodus* and *Holoptychius*; these scales were somewhat ovate in shape, but otherwise they possessed the general characters of the scales of *Holoptychius*, in fact, Professor Williamson had described them in the Transactions of the Philosophical Society, for 1849, as scales of *H. Sauroides*; the general similarity between the teeth and scales of these two genera show that they should be classified in one family. Then portions of the mandibular bones were discovered with a few of the teeth *in situ*, and the teeth were observed to be of two sizes, and the external surface of the bone was sculptured. So far as our knowledge extends we may fairly consider *Rhizodus* to a member of the *Crossopterygideæ* and of its sub-family *Glyptodipterini*. Professor Owen, in his "Palæontology," which was published some time before Professor Huxley's classification was printed, arranged *Rhizodus* and *Holoptychius* in a family called *Holoptych*, and supposed them to be allied to the *Coelacanthians*. Prior to the appearance of Professor Owen's synopsis Agassiz designed it as a *Sauroid*. Although I have said that we must characterise these remains as those of a fish, it is only fair to state that this opinion is not generally accepted. Mr. T. P. Barkas, Mr. Atthey, Mr. Hancock, and many other palæontologists are inclined to believe that they were reptilian and not piscine; this difference of opinion can only be settled by further discoveries, certainly the teeth of *Rhizodus* are amphibian in form and structure, but the same

* In the absence of my son from England, I may say that I think that undoubted bones of *Rhizodus* belonging to the shoulder girdle are in the British Museum and Edinburgh Museum. —T. P. B.

may be said of many other teeth that do undoubtedly belong to fishes. The teeth and scales of *Rhizodus* are reported to have been found in the South Northumberland coal measures by Mr. Atthey, but as I have already explained, the teeth were owned by a Batrachian, *Loxomma*; with regard to the scales, Mr. T. P. Barkas, F.G.S., considers them to be the scales of *Archichthys*, or of some other member of the *Glyptodipterini*, but certainly not those of *Rhizodus*, and with this opinion I quite agree. *Rhizodus*, therefore, is not obtained from the true coal measures of this county; its remains, however, have been found in the coal strata of North Northumberland, which belong to the Carboniferous limestone age; from this formation I have obtained some very good specimens, and I am indebted to Professor Page of the Newcastle-upon-Tyne Physical Science College, for the tooth from which I made my sections. If *Rhizodus* had been found in the true coal measures, the fact would have been unique, because no other palæontologist, to my knowledge, has discovered its remains in that formation, although they have frequently found them in the limestone coal-beds. This fish has never been observed in Devonian rocks; it, therefore, belongs solely to the Carboniferous limestone period, and must have had a very short period of existence compared with other genera. The genus *Rhizodus* tends somewhat to overthrow Darwin's theory of the "Survival of the Fittest," because here we have a fish between thirty and forty feet in length, as estimated by Hugh Miller, with a body covered with thick scales and jaws garnished with teeth that occasionally attain to six-and-a-half inches in height, teeth larger than those of any other fish that existed during the Carboniferous era, yet it became extinct in a very short time geologically speaking.

The form of the mandible is unknown to me, as I have examined the teeth only when detached from the jaw, nor can I speak upon the authority of others, for all the mandibles that have been recorded are terribly distorted as well as very fragmentary. The external surface of the bone is said by Professor Owen to be tuberculated and ridged. From the alveolar border arise two rows of teeth—an internal one of large laniary teeth, and an external series of smaller, but still large, teeth. The number of laniary teeth in a mandible is said to vary in different specimens, but the average is from three to five.

The laniary teeth (fig. lxxx.) are made elongated, conical, and rather acutely pointed; the smaller serial teeth are also conical, but they are somewhat obtuse at their apices; both forms have a tendency to curve inwards, but this is most marked in the larger teeth; they have an elliptical transverse section, the edges of the ellipse being trenchant, but, in some cases, only one side is thus sharpened, the other being rounded; in the specimen I have figured both edges are cutting. The external surface is smooth and glistening, and generally of a rich brown colour, though it sometimes approaches to black; this tint is often uniform, but, in the tooth portrayed in fig. lxxx., it is not so, but is arranged in a series of alternate light and dark brown rings; these rings commence at the base, and extend up to the apex. The base is deeply grooved longitudinally, the ridges between the grooves are rounded, and their external surface is sometimes smooth and sometimes marked by a fine vertical striation, which extends above the fluted base for a short distance. A vertical section of a tooth exhibits the form of the pulp cavity, and the method of the insertion of the roots into the jaw. With regard to the roots, not much need be said; their mode of formation by the folding of the dentine, and the gradual division of the convolutions into roots, and the extension of the separated roots into the bone substance until the dentine becomes blended with the osseous structure, are exactly similar to the description I gave of the roots of *Megalichthys*. The structure and character of the roots are very fairly represented in plate 36, fig. i. of Owen's *Odontography*. The pulp cavity also presents similar characters to that of a tooth of *Megalichthys*, being conical and broadest just before the dentine becomes convoluted, but when the cavity is cut transversely, it presents an ovate section corresponding to the external form of the tooth.

The microscopical appearances that I detailed in describing vertical and transverse sections of the teeth of *Megalichthys* agree exactly with the characters presented by similar sections of the teeth of *Rhizodus*. The diameters of the calcigerous tubules in the latter tooth average about one-tenth thousandth of an inch, but the tubes ramifying in the convolutions of the base are slightly larger than those permeating the body; the interval between two tubes is equal, as a general rule, to about four times the diameter of one tube. The tubules, in their course towards the enamel, pass into and through

a well-marked layer of cells filled with carbonaceous matter, situated near to the periphery of the dentine. I have given a representation of this structure in fig. lxxx. After leaving this stratum the fine tubes proceed to the external surface, and many of the ramuscles enter into the enamel.

The enamel is a comparatively thin coat which covers the whole of the inserted part of the tooth, and also extends for a short distance down the convoluted base, dipping, at the same time, into the grooves. It possesses a similar structure to that of the enamel of a tooth of *Megalichthys*, except that there are not usually any of the black points that I mentioned as being always observed in the enamel of the latter fish.

Before leaving this fish, I wish to point out that Professor Owen, in his "Dental Characters of Carboniferous Fishes," gives a description, accompanied by a plate, of a tooth which he considers to be new, and names *Mioganodus lanianus*. This is only another example of the numerous errors that the author has made in his work with regard to our Northumbrian coal measure teeth. It is not new at all, and was named long prior to the date of Professor Owen's supposed discovery. It is a common specimen of a detached tooth of *Loxomma*, which formerly was thought to be a tooth of *Rhizodus*.

- Fig. lxxx.—Tooth of *Rhizodus*. Nat. size.
 lxxxi.—Trans. sect. of ditto. Mag. 200.
 lxxxii.—Maxilla of *Rhizodopsis*.
 lxxxiii.—Premaxilla of ditto.
 lxxxiv.—Mandible of ditto.
 lxxxv.—Trans. sect. of body of Tooth of ditto. Mag. 200.

A Clinical Lecture on a Case of Foreign Bodies in the Trachea and Œsophagus.

By CHRISTOPHER HEATH, F.R.C.S.,

Holme Professor of Clinical Surgery, University College Hospital.

GENTLEMEN,—You will remember that before Christmas I had under my care an exceedingly interesting, and, so far as I can learn, unique case of a tooth-plate with artificial teeth impacted in the trachea or lower part of the larynx in a patient who had at the same time swallowed another tooth-plate. There are plenty of cases on record of a tooth-

plate being swallowed, and a few of a similar foreign body passing into the wind-pipe, but I have not found one in which both accidents occurred simultaneously as in our patient, whose case I will briefly narrate to you from the careful report of Mr. C. J. Watson.

The patient was a young lady, *æt.* 21, who was admitted on the morning of Sunday, the 12th December, under the following circumstances:—During the previous night she had a fit of an epileptiform character, on recovering from which it was discovered that her artificial teeth had disappeared. These consisted of the two right incisors, mounted on a gold plate, and fastened by a pivot to the



FIG. 1.



FIG. 2.

central tooth (fig. 2), and of the left central incisor and canine teeth also mounted upon a gold plate fastened partly by a pivot and partly by a gold band (fig. 1). Her sister, on finding the teeth missing, called in a neighbouring medical man, who passed his finger into the throat and found nothing; but the patient being dissatisfied was brought to the hospital at 8.30 a.m. When seen by Mr. Collyns, the house-surgeon, she complained of pain on the left side of the neck a little below the cricoid cartilage, but nothing could be felt externally. A sponge probang was passed, and the house-surgeon fancied it hitched against something, as it was withdrawn, and therefore tried the *œsophagus* forceps and umbrella probang, but without result. When I saw the patient at eleven o'clock I passed a probang without result, and made her swallow some boluses of chewed bread, which she did with difficulty. Later in the day I passed a "coin-catcher" and the horse-hair umbrella probang without result, and then a large elastic *œsophagus*-bougie, which possibly displaced something, for the patient at once said she felt easier and could swallow readily. At this time there was nothing to direct attention to the wind-pipe, for the slight huskiness of voice would have been easily caused by the repeated manipulations the upper part of the throat had undergone. In the evening, however, the

breathing became more laryngeal, and the house-surgeon, thinking that the foreign body might have lodged in the trachea or bronchus, examined the lungs and found them equally resonant, the breathing equally weak on both sides. I mention this particularly because, at a later period, there was a marked difference on the two sides. The patient slept well, and on the next day (13th) she complained of pain at the episternal notch, and the breathing continued laryngeal. As, however, she objected to stay in the hospital—for which, indeed, she was not a suitable inmate—I allowed her to go home, to be under the care of her own medical man. On the following day (14th) the medical man wrote to ask that she might be re-admitted, as the symptoms had become more urgent, and we then found that the laryngeal character of the breathing had become more marked, and that there was a decided difference between the two sides of the thorax, there being a marked diminution of expansion on the *left* side. There could be no doubt now that one of the teeth-plates had passed into the wind-pipe, but it was difficult to explain the want of expansion on the left side, since foreign bodies which fall through the trachea almost invariably pass into the *right* bronchus, owing to the tracheal septum being somewhat to the left of the median line. To clear up all doubt as to the existence of the foreign body before undertaking any operation for its removal, I determined to have recourse to the laryngoscope, and, somewhat mistrusting my own skill in the use of that instrument, I was very glad to avail myself of Dr. Morell Mackenzie's kind offer of assistance. Accordingly, on the evening of the 14th, that gentleman made a laryngoscopic examination, and not only satisfied himself, but demonstrated to myself and others, that two white teeth were to be seen fixed in the trachea immediately below the larynx. Nothing was to be seen of the second plate, and it was just possible that this might be obstructing the bronchus lower down. With the certainty of the presence of a foreign body in the trachea, there could be no question as to the propriety of at once removing it by operation, and accordingly on Wednesday, December 15th, I performed tracheotomy above the thyroid isthmus, and extracted, with some little difficulty, the tooth-plate and two teeth I show you (fig. 2). Although the incision into the trachea was high, the foreign body lay above it, and must, therefore, have been entangled in the

cricoid cartilage. Why it should have affected the left side of the chest I cannot say, except by supposing some irritation propagated to the pneumo-gastric nerve of that side, but that this alone was the cause was proved by the immediate recovery of normal breathing by the left lung, and by the very satisfactory discovery of the second tooth-plate (fig. 1) in the evacuations on the evening of the same day. The further history of the case need not detain us long. The wound into the trachea did not heal by first intention, but gradually closed, the patient going home on January 3rd with the skin-wound not completely closed.

It will be convenient to consider the question of the treatment of the foreign body which passed into the stomach, before taking up the more urgent one of the foreign body in the trachea. A foreign body which is readily swallowed rarely gives any trouble if left to itself, for a coin or similar object will find its way safely enough through the intestinal canal if allowed to become thoroughly coated with fæces. The common practice of giving a child a dose of castor-oil because it has swallowed a half-penny or a button, cannot be too strongly deprecated. The case is different, however, if a sharp body such as a needle or pin, or even a fish-bone sticks in the gullet, for then the recurring efforts of deglutition may force the offending body through the wall of the canal and give rise to serious mischief. Even fatal results have arisen from perforation of the aorta or the heart by a needle, and within the last few years I have had here two cases of swallowed pins giving rise to torticollis or wry neck from the irritation set up. In both these cases I was fortunate enough to bring up the offending pin with the umbrella horse-hair probang, but if this had not been done no doubt suppuration would have been set up among the muscles of the neck, and possibly the foreign body would have been discharged with the contents of the abscess.

The most difficult foreign body in the gullet we have to deal with is a set of artificial teeth mounted in metal, as in fig. 1. The gold bands or pins, by which the plate is affixed to the adjacent teeth, are so sharp as to catch readily in the pharynx or œsophagus, and even if safely landed in the stomach, the "set" may be too large to pass through the intestinal canal. Mr. Pollock has recorded (*Lancet*, 1869) two cases of this accident, in one of which the teeth passed safely per anum, while in the other the stomach after some

weeks rejected the intruder, which was safely vomited. It would be doubtful practice, however, to induce vomiting with the view of ejecting a foreign body from the stomach, for fear of getting it impacted in the œsophagus, and the same may be more certainly said of any attempt to draw up a foreign body through the gullet, although Mr. Little has recorded one remarkable and successful case of the kind. Given a case of foreign body impacted in the pharynx, it should undoubtedly be extracted if possible with the horse-hair probang, coin-catcher, or œsophagus forceps, and, all attempts at its removal failing, recourse should be had without delay to the operation of œsophagotomy. This operation has now been several times performed in this country with success, and notably by Mr. Cock, who has on two occasions extracted teeth-plates by it. The operation consists in making an incision along the border of the left sterno-mastoid as in tying the carotid artery, but going to the inner side of the carotid sheath the operator cautiously dissects down to the pharynx and œsophagus, being guided by the foreign body within the canal. An opening being made in the gullet the foreign body is carefully extracted and the wound allowed to granulate up. Had I been able to detect the tooth-plate impacted in the œsophagus in our patient, I should certainly have performed œsophagotomy without delay, after having given a fair trial to attempts to withdraw the plate.

The introduction of a foreign body into any part of the air-passages is necessarily fraught with danger to the patient, but the immediate urgency of the case will depend upon the position occupied by the intruder. If the chink of the glottis is filled up completely by such a thing as a piece of meat, the patient must necessarily die, unless it is promptly removed; and it is well to bear in mind that aged persons, who have lost their natural teeth and cannot afford to supply the want artificially, are in the habit of "bolting" morsels, which, if drawn into the glottis by the strong inspiration following a laugh or a cough, may cause the sufferer to fall back insensible, and in a condition which is popularly supposed to be one of apoplexy. I need hardly point out to you, however, that the want of breathing would at once distinguish the case as one of obstructed larynx, and the appropriate treatment would be to introduce

the finger, and, if possible, hook up the offending morsel; failing which, *laryngotomy* should be instantly performed, and artificial respiration persevered with for some considerable time before all hope of saving the patient is abandoned. I say *laryngotomy* rather than *tracheotomy*, because you will meet with cases of this kind suddenly, and when quite unprepared for surgical proceedings; and, besides, every moment's delay is of importance. Every one may be supposed to have a sharp pen-knife in his pocket, and the simple operation of cutting across the crico-thyroid membrane may be done as satisfactorily with that instrument as with the more professional scalpel. Another advantage is, that the opening in the crico-thyroid membrane will gape sufficiently to relieve the patient without the introduction of any tube; or, if the space is small, the cartilages can be held asunder with a blunt pair of scissors. Let me remind you that the firm ring of the cricoid cartilage is always to be felt, even in women and children, although the *pomum Adami* may be badly developed, as it usually is, except in men; and recommend you in urgent cases not to attempt any superficial vertical incision, but, steadying the larynx with one hand, to cut boldly across the membrane and into the larynx. But, supposing you to have been fortunate enough to restore your patient to life, he cannot be considered out of danger so long as a foreign body remains impacted in the larynx; and steps must be taken for its removal. A soft catheter passed through the artificial opening, upwards through the larynx, would probably displace the foreign body into the mouth; but if it were impacted in the ventricle of the larynx, it might be necessary to have recourse to laryngeal forceps, guided by the laryngoscope, or even to perform thyrotomy, *i.e.*, to divide the thyroid cartilage, so as to gain the interior of the larynx.

The more frequent case, however, is when, as in our patient, a foreign body is unconsciously drawn into the trachea, passing through the larynx easily, and giving at the moment very little trouble. A disobedient child, with a farthing or a button in its mouth, gets a thump on the back to enforce the order for removal, and consequently makes a violent inspiratory effort, as the preliminary to "roaring;" but that effort draws the foreign body into the trachea, with no symptoms at the moment. Later on, a

violent attack of dyspnœa and spasm occurs, for which medical aid is sought, and then it is found that the foreign body is in the wind-pipe. Now, I believe, the urgency of the symptoms will depend very much on the nature of the foreign body. In our recent case, the symptoms were very slight, so slight at first as not to direct attention to the wind-pipe, and though, as time went on, the breathing became more laryngeal and noisy, there never was any spasm. The explanation is that the tooth-plate was fixed, and did not come into contact with the sensitive vocal cords. Some of you may remember a child who was under my care last summer, with a cherry-stone in its trachea, in whom the symptoms were negative so long as the child was quiet; but when he cried and coughed, the cherry-stone was thrown up, and irritated the larynx, giving rise to spasm. The well-known case of Mr. Brunel is an instance of the same thing. The half-sovereign which passed into his trachea fell into his right bronchus, and lay there quietly enough until he inverted himself, when it slid along the trachea, and produced violent spasm which threatened his life; and it was only after tracheotomy had been performed, and the watchfulness of the larynx thus eluded, that the coin passed through the rima glottidis into the mouth. And yet now and then you may be lucky enough to get out a foreign body by inverting the patient, as happened to my friend and former colleague, Mr. Henry Power, who, some years ago, at the Westminster Hospital, shook out of a man's trachea the flat pebble I now show you. But let me warn you not to expect too much from such a proceeding, and to be cautious in adopting it without being prepared instantly to perform tracheotomy, should the foreign body happen to become fixed in the larynx, and thus give rise to urgent dyspnœa.

But a foreign body may not merely pass into the right bronchus, it may become fixed there, particularly if it is of such a shape as to fit pretty accurately into the opening. Under such circumstances, the right lung will cease to work, either wholly or in part, and the left lung will have to do extra work, in order to make up for the occlusion of its fellow. If the body is solid and smooth, it will probably get coated with mucus, and loosened so as to be driven back into the trachea on some effort of coughing, but if it happen to be of an absorbent nature, such as a bean or pea,

it will swell with the moisture of the part, and will become more firmly fixed, leading inevitably to a fatal result. The coloured illustration I show you in Mr. Cooper Foster's "Surgical Diseases of Children" well illustrates this point. Again, the foreign body, if of suitable shape, may be drawn completely into the lung, and set up there fatal suppuration; though Sir Thomas Watson gives, in his classical "Lectures on Physic," the case of a child who coughed up a tin-tack, with a quantity of offensive matter from the lung and recovered.

In the great majority, then, of cases of foreign body in the trachea, an opening must be made in that tube, by preference above the isthmus of the thyroid. The opening may be deliberately made under chloroform, and the after-proceedings conducted according to the nature of the body. If light, like a cherry-stone, button, or piece of cork, the edges of the tracheal wound should be held open with blunt hooks, until the entrance of air produces a cough, when the intruder will probably be shot out. If not, a probe may be carefully introduced, or a bent wire used to bring out the offender, or, in case of a heavier body, forceps may be cautiously employed, both above and below the opening, to grasp it; or, failing this, the patient may be inverted with safety, and a sharp blow struck over the back to dislodge the foreign body. The presence of a foreign body in the wind-pipe having been once satisfactorily ascertained, the sooner it is removed the better, for, to trust to spontaneous expulsion, is to expose the patient to very considerable and constantly recurring risk.

Clinical Lecture on the Scope of Dental Surgery.

Delivered at King's College, London.

By HAMILTON CARTWRIGHT, M.R.C.S.,

Professor of Dental Surgery at King's College, and Lecturer at the London School of Dental Surgery.

The duty which devolves upon me of giving you a course of clinical lectures and demonstrations on dental surgery is a peculiarly pleasant and congenial one, inasmuch as I have to address a body of gentlemen who are studying medicine and surgery in a general hospital, upon a subject which has been looked upon too much in the light of a speciality, more

separate than other specialities from medicine, and which I fear, as a rule, does not meet with that measure of attention which is its due ; although, if you would give even a very small proportion of your time, in comparison with that allotted to your other studies, to its consideration, I am certain that you would thereby render yourselves good service in a future day. I fear that there are too many not only of those who are without the ranks of that branch of surgery which I profess, but also of the less highly-cultivated practitioners within them, who seem to think that the practice of dentistry merely implies the filling or extraction of teeth ; and I must confess that I have often been surprised at the ignorance of intelligent members of our profession in relation to diseases of these organs. Feeling strongly as I do, as a surgeon, the *rapproch* existing between this speciality and general surgery, I shall attempt to show you to-day, in this Introductory lecture, the necessity, on the one hand, that the dental practitioner should not only be a fully-qualified but also an intelligent surgeon ; and, on the other, that the general surgeon, aye, and the physician, too, may derive some benefit from studying those diseases, direct or indirect, which have their origin in morbid or abnormal conditions of the dental structures. You all recollect the fable of Menenius, wherein he pointed out to the dissentient plebeians the harmony existing between the various parts of the human frame, applying the moral of his story to their divisions with the patrician body of the state. Now, the teeth are in as intimate relation with the body generally as is the eye or ear, and their morbid conditions can only be treated rationally upon such acknowledgment. The oculist and the aurist are fully-qualified practitioners. The dentist should be so also, and it seems to me ridiculous that men should cavil about their status and position in the social scale, if they do not choose to educate themselves as other specialists are educated. The teeth must not be looked upon as mere pegs or nails inserted into living structure, but as organs having the most important relation to the whole system ; and I think that I shall be able to prove to you that there is not a period in life when some knowledge concerning their development and condition may not be of service to you in any branch of practice, whilst the special objects of my future demonstrations will be to give you practical illustration of the treatment and diagnosis of cases quoted

here, and to show you those operations which, having for their object the relief of pain or the arrest of disease, may be especially useful to those in country practice, or to those about to be engaged in the naval and military service of their country.

Firstly, consider, with me, the position of the maxillary bones, in which the teeth are implanted. Consider with how many nerves, with their attendant ganglia and plexuses, those teeth have connection. On each side, the oral cavity is in close proximity to the internal and external ear. Above, it is in near relation to the orbits and that oft-troublesome cavity the antrum, which is again in contiguity with the nasal fossæ, the contents of which are frequently affected as a result of dental disease; whilst, finally, the continuation of the oral aperture leads to the stomach, in which arise, should assimilation be imperfect, the first causes of faulty structural development, or in which are produced, if dyspepsia exist, those acids which, being eructed into the mouth, constitute a local source of dental lesion; whilst the unhealthiness of the mucous membrane of the gums may serve as a valuable means of diagnosis in various morbid conditions of the gastro-intestinal mucous track.

The necessity of some knowledge of dental surgery to the general surgeon, and of medicine to the specialist, is shown from the earliest period of existence. Caries and imperfection of tooth-structure are to a very great extent, I regret to say, diseases of civilisation; and my experience as a traveller in many parts of the world has taught me how much influence climate and *modus vivendi* have, not only upon the condition of the teeth, but upon the body generally.

As a rule, the savage or aborigine scarcely suffers from dental lesion, save in those instances where the conditions of his life are peculiarly adverse to constitutional integrity. The freedom of the aborigine from disease undoubtedly depends, to a great extent, upon the healthy life he leads. His hours are regulated by the rising and setting sun, whilst his occupations all conduce to health; but, when the country is notoriously unhealthy, his system is affected by the existing factors of disease; thus it is remarked that, on the eastern side of the Rocky Mountains, where the climate is healthy and bone-forming food abundant, caries is unknown; whereas, on their western boundary, where animal food is very scarce, and the vegetable diet deficient in those ele-

ments which are the chief ingredients of osseous tissue, disease is not unfrequent. Mine has been the same experience in relation to the Zulu and Bosjesman tribes in Africa, and also with regard to various parts of China. If you ever happen to be near Hythe, in Kent, and will visit the old church there, you will see hundreds of the skulls of our Anglo-Saxon progenitors, and will find that their maxillæ are well developed and firm in structure, with not a tooth decayed in young or old ; and in this specimen, at least two thousand years of age, found in a sarcophagus during excavations made at Cumæ some short time since, you see another proof that the changed conditions of modern life present important factors in the induction of disease. If you will examine more modern skulls, a very different story will present itself, decay revealing its ravages on every side. The causes of this disintegration of tissue are numerous. Change of climate may alike produce or arrest disease ; thus when the healthy Irishman or Scotsman quits his home for another habitat, where potatoes and oatmeal, rich in bone-material, are not abundant, in a few years he suffers from disease alike with those amongst whom he has sought another home ; whilst, on the other hand, another person may regain new health in another clime, and the tendency to disease may cease. The argument from these facts is that, inasmuch as it is proved that a constitutional condition can exist in which the teeth may be free from caries, there is no reason why, if we discover the conditions of this immunity, we should not be able, in the course of a generation or two, to bring about a like result ; for all evidence tends to prove that there are constantly recurring changes of waste and repair taking place in the dental tissues as in other parts, though naturally their structure forbids these being as rapid as in other tissues. I am confident that the prevalence of dental disease in the present day is, in no small proportion of cases, a direct consequence of the way in which our food is over-refined and prepared, so much so, that it is too frequently almost entirely deprived of those elements which are most requisite for the formation of firmly knit bones and healthy muscle ; and I fear that parents will never be taught to understand, until they are instructed in the elements of physiology and hygiene as a part of their education, how often they are unwittingly responsible for the sufferings of their offspring. The bread of our Anglo-Saxon progenitors

was prepared of crushed meal, in which the husk and the flour were mixed up together, so that all the necessary constituents for tissue-formation were retained, with such results as those to which I have alluded. The pregnant mother should be enjoined to make use of food containing an excess of nitrogenous material, so as to counterbalance the extra demands on her blood for those inorganic particles which are necessary to build up the framework of her child. The child being born—and it is after birth that the greater portion of the bony framework is deposited—its digestion and its powers of assimilation must be carefully considered in determining the character of its food; whilst, in later years, it should be amply supplied with ossifacient material, such as eggs and potatoes, and, above all, if its assimilative powers be intact, bread made with the bran. But the treatment of the child ought to commence with that of the parent during her pregnancy; and, to make her submit to this, she must be taught the responsibility which her condition imposes upon her in regard to the welfare of future generations. Could this be done, in a generation or two, many constitutional defects might be blotted out, and notably diseases like rickets, scrofula, and caries. I have had the good fortune to have some few children under my care from early childhood; and, by judicious attention to their digestive and assimilative powers, I have been enabled to arrest those ravages which, I am convinced, would otherwise have maintained their sway until nearly every tooth had been destroyed.

Let me next consider the subject of teething, a period so fraught with danger to the child, that no less than 5 per cent. of the deaths under one year, and 7 per cent. of the deaths between that period and three years, are ascribed to dentition. At this epoch, when the spinal predominates over the cerebral system, the slightest sources of irritation may lead to fatal results: for that which causes a shudder in a man may produce a convulsion in the infant. The symptoms of dental irritation may be confounded with congestion or inflammation of the brain and its membranes, and in some cases a mistaken diagnosis might be of serious import. Whilst cursorily alluding to the maladies which are dependent upon, or synchronous with, the eruptive stage, I cannot but draw your attention to the empiricism often exhibited in lancing the gums, that favourite method of treatment for actual or supposed dental irritation. There is little

doubt that the gums are not only lanced during those periods of repose which characterise evolution, or when the osseous structure of the maxilla still remains unabsorbed over the advancing tooth, but that, as a rule, this operation is performed simply because, in a few cases, the relief of tension in congested tissue has sufficed to relieve an attack of convulsions. Where the tooth is just beneath the gum, or where there is manifest congestion, the incision of the parts may be productive of much benefit, but otherwise it is a procedure not only useless but barbaric. Retardation in development of the teeth is also a means of indicating future disease; for example, when their eruption is delayed beyond nine months, there is every reason to suspect that the child is suffering from rickets, a valuable means of diagnosing that disease for which we are indebted to Sir William Jenner. Next I must mention some of those diseases connected with the teeth which characterise a later period in life, than which none is of greater importance to the practitioner than neuralgia. If you will recall to mind the extensive sympathetic connections of the trigeminal or fifth nerve, it will not seem strange to you that the teeth should be often connected with reflex phenomena leading to simple spasm, neuralgic pain, or even epilepsy, whilst, in nine cases out of ten in which neuralgia attacks the upper extremity, a dental lesion will be found to be the exciting cause of irritation. This disease has the epithet "idiopathic," far too often applied to it; for in nearly every case a cause exists, though it may be concealed from us, whether it has its origin in the filament of nerve ensnared by cicatrix, in a hidden splinter or a lurking parasite. Doubtless, you are all familiar with a case quoted by Sir Thomas Watson, of a well-known physician who was forced to relinquish an extensive practice and a distinguished position through the terrible agonies he suffered as a consequence of tic douloureux. Every remedy was tried in vain, until death revealed the cause, which existed in a small osseous excrescence upon the falciform process of the dura mater. If I could lay down an axiom with regard to the treatment of neuralgia, it would be, "Never rest until you have found the cause"; for it will often discover itself when least expected.

[Mr. Cartwright here related a case under his care, in which he found severe neuralgia of the parts supplied by the cervical and brachial plexuses to be due to the presence of a

small piece of glass in a swelling over the third phalanx of the second finger of the right hand ; the removal of which permanently cured the neuralgia.]

Like sources of irritation exist very frequently in diseased or abnormal conditions of the structures of the teeth, and my experience teaches me that this is a fact not sufficiently appreciated by medical men. The ordinary treatment of neuralgia is far too often empirical. One specific is tried after another with varying success, until all fail, whilst the oral cavity, so rich in explanations of reflex pain, is quite forgotten or overlooked. Caries is by no means the most frequent source of neural pain ; for it is often to be found in exostosed cementum, or as a result of secondary dentine formed within the pulp ; whilst, yet again, an osseous excrescence growing from the dentinal wall may, by its pressure on the nerve, be an exciting cause, as in the case of this beautiful and unique specimen prepared and kindly lent to me, with others, by Mr. Salter. It is sometimes difficult to discover the offending member ; but a gentle tap, the alternate use of hot and cold water, or, if the pulp be sphacelated in a non-carious tooth, the appearance of opacity on exposure to a strong light, will make the culprit doff his disguise, and reveal a traitor in the camp.

Amongst my notes, I have recorded the case of another patient who had long been the subject of intractable neuralgia in the head and face. She had been in the hands of celebrated physicians, of quacks, of homœopaths and hydropaths, but with no relief. The pain invariably had its origin on the left side of the face, just over the malar bone. On examination, all her teeth seemed perfectly sound, and the tests mentioned above suggested no intimation of disease. One day, knowing my suspicions that the teeth might be the source of her trouble, she told me that she had an "undefined sensation" in one of the teeth, but she could not point out whether it was the canine or the bicuspid on the left side of the superior maxilla ; but the renewal of the tests gave no sign of pain. After various experiments, I resorted to the use of a galvanic current, which made her say that she was certain that the canine was the tooth which had a different feeling from the others. Warned that the loss of the tooth would very probably not effect a cure, she begged me to extract it on the chance of relief being afforded thereby. I did so, and, if you will

examine this preparation of the tooth under the microscope, you will see that the cause existed in an almost total ossification of the pulp. After a week, her pain entirely ceased, and not long since she described herself to me as sitting at an open window on a cold day at the seaside—a thing which she had not dared to do for several years. Of such cases I have seen many; and the immediate relief which occurs upon the removal of the exciting cause of pain makes me somewhat question the correctness of the late Dr. Anstie's view in relation to neuralgia, that the seat of pain is invariably situated in the posterior roots of the spinal nerves, and that an essential condition of the tissue of those roots is atrophy. Then, various diseases of the ear, the nose, and antrum, and even amaurosis, have had their origin in diseased conditions of the teeth, so that an oversight as to the source of mischief might lead to the loss or impairment of the functions of at least three of the organs of special sense. Mr. Hancock, of Charing Cross Hospital, mentions a very remarkable case of amaurosis dependent upon nothing more than an overcrowded condition of the teeth. Four of these were removed with such good effect, that the sight, which was nearly entirely lost, improved at once, and was again perfect within ten days. I could quote many similar cases, many of which have occurred in my father's practice, some few in my own, but would refer all of you who are interested in the subject to Mr. Salter's valuable work on "Dental Pathology and Surgery."

It must not be forgotten that the teeth are not only the sources of, but that they are not unfrequently the objects of, sympathetic irritation themselves, and have, doubtless, in the absence of adequate knowledge as to the cause of pain, been often condemned for the faults of other members, like certain unfortunate officers in a recent naval inquiry. Thus I have frequently seen a constipated condition of the bowels induce pain in the teeth; and in another case an attack of gout is always ushered in by intense dental suffering, which a dose of colchicum relieves at once; whilst I have long had a patient under my observation, who, suffering from hæmorrhoids, always has acute pain in his upper molar teeth when these become congested, which invariably ceases when an attack of hæmorrhage relieves the engorged vessels. Many of the tumours which afflict the maxillæ have their origin in a diseased root or an impacted tooth, these varying from

the simple abscess to the cyst or odontome, in which latter tumour an appreciation of its character renders its removal the simplest of operations. A swelling occurring in connection with the unexplained absence of a member of the normal dental series should always suggest a hint in such cases, and it will be found that this class of tumour is invariably encysted, so that the removal of a little superficial bone will permit these growths to be enucleated with little loss of tissue.

Again, in a very large proportion of examples of abscess or neuroses connected with the maxillæ a local source of irritation exists, such as may be found in a wisdom tooth attempting fruitlessly to take its position where there is want of space, or, more often still, in the remnant of a fang over which the gum has grown. Such errors in diagnosis are frequently made with regard to patients of strumous and scrofulous diathesis, in whom the history of the case and the swollen glands too frequently mislead the unwary practitioner. Wherever there are sinuses in connection with the glands about the jaw, search for an errant root. You may have much trouble in discovering it; but, if you be successful, its removal will not only instantly cure the patient, but prevent that terrible disfigurement which is a result of abscesses in this position. I have witnessed the cure of long-standing suppuration diagnosed as scrofulous again and again by the extraction of a root, the presence of which was unsuspected by patient or practitioner.

Finally, every surgeon practising in the country or abroad, in places where special aid is not at hand, should be able to arrest pain and disease in the teeth; at least temporarily, whilst he should have some knowledge of the treatment of the milk-teeth, which he is often called upon to remove; indeed, with regard to the latter subject, his appreciation of the simple rule, never to remove a temporary posterior molar or canine without urgent reason, would alone prevent many subsequent deformities of the permanent denture.

Think how many teeth might be saved by the aid of a little special knowledge concerning their diseases. Such knowledge would be useful to all, but especially to those who are about to devote themselves to the preservation of the health of those who maintain England's glory and good name, *per mare, per terras*. The agony which I have seen soldiers, and especially sailors, suffer from their teeth has

been terrible, and in too many cases without a chance of satisfactory aid, unless it be by the extraction of the offending organs. By such unnecessary losses men are incapacitated before their time, and it is from a feeling of pure humanity that I would insist upon the necessity of army and naval officers devoting a short period to the study of diseases of the teeth, thereby arming themselves with another weapon with which to combat pain and suffering. In future lectures, I shall hope to have opportunities of showing you examples of those direct and indirect results of dental lesion to which I have alluded to-day, whilst I shall especially demonstrate to you those operations necessary to alleviate pain or to arrest disease, whether temporarily or permanently, by more complicated means. My task will be a labour of love, if I can impress upon you the importance of my subject when considered in its highest *rappports*; whilst I shall feel that, in disseminating amongst you what little knowledge I possess, I shall be contributing in some small way towards the lightening of those burdens, and the assuagement of those many ills to which flesh is heir.—*British Medical Journal*.

Two Cases of Enamelless Malformed Teeth.

BY DR. J. V. SCHNEIDER, Wurzburg.

Examining the teeth of a patient 55 years of age, I found in place of the first left lower molar a toothlike body (Fig. 1. Natural size). It was rather loose in the lower jaw, the crown projected 4 M. M. above the gum, and was shining and yellow. On the edge of the gum itself there was a layer of dentine.

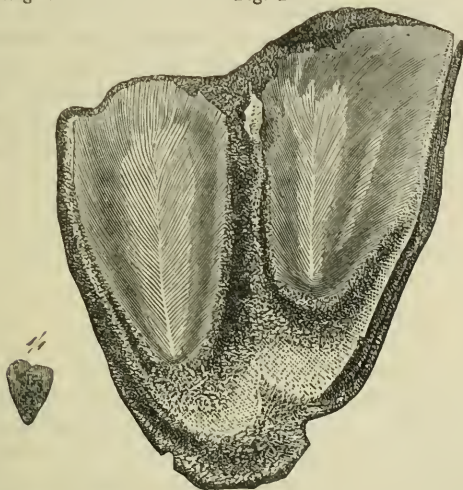
In answer to my questions the patient declared that the tooth in question had been extracted five years before, without being broken, which I found to be the case later, when she produced this tooth, as well as the others she had had extracted.

A year after the extraction of the tooth the new formation appeared, and since then had given no trouble. On examination I decided to extract it. The periosteum was somewhat thick, otherwise normal; round the neck of the tooth was a layer of dentine. Microscopical examination of a section is shown in Fig. 2. The bulk of the cementum strikes one

at once, surrounding the whole body, especially thick at the point of the fang and filling the pulp cavity. The osteoblasts were decidedly smaller than in normal cementum. The dentine tubes were normal in size and length. There was not the slightest trace of enamel.

Fig. 1.

Fig. 2.



A second case came under my observation a few days ago, in a lady aged 22 years, and was also in the position of the first left lower molar. The size was much the same; and here, also, with very strong formation of cementum and normal dentine, the enamel was wanting. Similar cases have been mentioned in this journal in 1872 and 1874.

A real third dentition is not impossible, although to establish its existence is attended with the greatest difficulty. In such a case it must be proved that it is not simply a retarded or superfluous tooth. By the phrase "third dentition" we understand an entirely separate disposition of tooth germs, distinct from the first and second dentition. The tooth germs of the third dentition must, therefore, be formed after the germinal period of the temporary and permanent teeth is completed. That teeth of the third dentition may eventually proceed from the same enamel germ, which has performed the same office in the first dentition, is admissible, only the third tooth germs must have been formed after the close of the first dentition.

We know that probably many of the recorded cases of third dentition have been mistaken for retention of the permanent teeth which were erupted very late. Even where several teeth were cut very late, we must not forget that sometimes the teeth are retarded in great numbers. Most of the recorded cases occurred in the last century, whilst newer literature, notwithstanding the study bestowed upon teeth during the present decade, has discovered no new case. We must, therefore, consider the above-mentioned instances as enamelless malformations, which have become developed from a superfluous tooth germ. In conclusion, we call attention to the scientific interest which an enamelless tooth-malformation must possess for anatomists.

Periostitis Dentalis.

By Dr. JULIUS SCHEFF, Vienna.

From the *Wiener Medizinische Presse*.

Of all the diseases of the human organism, with the exception of epidemic maladies and caries of the teeth, periostitis will probably be found to be one of the most frequent. Even although in by far the great majority of cases an etiological cause can be discovered, it cannot be denied that in many other cases no such origin can be found, and these we refer to a predisposition to the malady. These must often be considered as the cause until the discovery of some hitherto-unobserved agent in the production of the periosteal inflammation. How this may be, whether this or that agent produces the disease, we shall not in this connection attempt to determine, for in all inflammatory affections the etiology, so long as only conjectural, plays but an unimportant rôle, and we have as yet no positive foundations upon which to rest.

A few etiological points in the production of dental periostitis can be stated with a degree of positiveness. In the first place, we may mention external irritants, as mechanical, chemical and thermal, whose effects are manifested in various ways; the mechanical by strokes, falls, separation of neighbouring teeth, pressure upon the alveolar process, cracking of nuts and hard biting in general; the chemical by the introduction of foreign materials such as mercury, particles

of lead, strong medicaments as creosote, tannin, arsenic paste, &c. Thermal irritation is probably the cause of the least number of cases of periostitis, for in my opinion this can only occur when a part of the neck of the tooth is uncovered by the gum and alveolar, and, even in these, the mechanical and chemical irritants are most probably the principal factors. Among the other causes may be reckoned cold, as the so-called "periostitis rheumatica"; as observed among medical men, and to a far greater extent among the laity, this explanation on the theory of rheumatism must be considered on the one hand a mantle for our ignorance, and on the other a self-delusion; so it is with dental periostitis. Among the many hundreds of these cases which it has been my opportunity to see and treat, I have never yet encountered a single case, which could be explained as rheumatic, for in all there was a palpable cause, after the removal of which the disease was rapidly brought under control and subsided.

I will not assert that there are no cases of rheumatic periostitis, but I cannot comprehend why among these hundreds of cases (many of them considered by the physicians and almost all by the patients as being the results of "cold") none such should appear. Of course there are cases in which, for example, perfectly healthy teeth are attacked by an inflammation of the periosteum, and even I have made out a periostitis of this variety, and yet in these cases it has not been cold, but the mechanical irritation exercised by some hard foreign body which has accidentally found its way into the food.

My object is not so much an enumeration of all the causes, as a precise and definite statement of the most frequent, their mode of production and their consequences, because unfortunately too little attention has been paid by physicians to the diseases of the teeth and their anæxia.

In order to aid to some extent in filling this hiatus in the education of our physicians, I have undertaken to add my observations to those of men whose names are well known to the public.

Beginning with the above-mentioned etiological forces, we shall again recur to the sudden changes of temperature; even if these are not beneficial to the teeth, they cannot certainly have the effects usually attributed to them. I would simply inquire how many persons during the hot

season quench their thirst by ice water or other cold beverages. If a sudden lowering of the temperature of the teeth were followed by such consequences the cases of this disease would be almost without number.

It may, of course, be replied that the symptoms of the periostitis do not manifest themselves until after the lapse of several days, when the cooling draught is long since forgotten. I can then state that sound healthy teeth may be attacked by periostitis in addition to those whose crown and pulp have been destroyed. The peridentium of such teeth and roots is no longer intact, and it is evident that these can withstand but slight injury as compared with the sound ones.

After it has several times been subjected to inflammatory diseases, the entire organism is inclined to sympathise, and by-and-bye a certain predisposition is formed, which can, however, be considered as dependent on previous similar processes.

One thing that cannot be denied, that every one has experienced in his own person, is the fact that the sudden succession of cold and heat, or the reverse, produces an unpleasant sensation, but by no means a constant damage.

Further causes of inflammation of the peridentium are toxic agencies, for instance in the use of mercurials the peridentium of several teeth may be affected. Phosphorous contributes no less to the inflammation of the periosteum of single or several teeth.

Periostitis can also, however, appear secondarily, that is, preceded by affections of the neighbouring tissues. Thus, inflammations of the pulp extend through the cavity of the root to the periosteum, or inflammation of the gums may likewise produce it.

Finally, the fact that the teeth of females, and in consequence their surrounding membranes, become diseased readily, is due to the soft substance of which they are composed, and that they contain more organic material than the male. Having examined all the essential factors in the production of periostitis dentalis, we shall now consider its clinical and anatomical course.

(To be continued.)

A Dental Dinner.

The fashion of forming associations of men engaged in similar trades or professions has become almost universal in this country. If there were only two men in the whole United States, engaged, say, in the manufacture of soapstone griddles, they would promptly form themselves into a National Griddle Association, elect themselves respectively President and Secretary thereof, and proceed to hold annual conventions for the purpose of reading essays at one another on "Grease in Relation to Griddles," and the "Past and Future of Soapstone." There is no reasonable doubt that there exists a "Peripatetic Sidewalk Dog-sellers' Association," and a "National Brotherhood of United Old Clothes Men."

Not long ago the United Druggists held their annual convention in Boston, and now the dentists belonging to the "Odontological Society" have gathered themselves together in this City. Persons who have had their teeth repaired at different intervals during the last twenty-five years cannot fail to have noticed the great progress which dentists have made in their useful but excruciating profession. A quarter of a century ago, the dentist was an athlete who removed teeth with an instrument called the turnkey, which was constructed upon the principle of a ship's capstan, and which nearly always accomplished its fiendish purpose, provided the operator was in good training, and braced himself firmly with his feet on his victim's shoulders. The protracted agony of preparing cavities for filling was accomplished by the old-time dentist with the aid of a variety of clumsy chisels and augurs, which produced upon the patient's excited brain the firm conviction that the whole interior of his person was undergoing excavation at the hands of the malevolent dentist, and that unless the bony structure of his knees should prove an impenetrable barrier, his legs would inevitably be tunneled throughout their entire length. These vigorous methods of practice have, however, been long since discarded. If you wish to have a tooth drawn, the modern dentist politely reduces you to insensibility with anæsthetics, and when you awake you find that he has painlessly pulled as many teeth as time or inclination may have permitted him to remove. Of course, this easy method of tooth-pulling is open to the objection that an enthusiastic or careless dentist may pull dozens of useful teeth before the patient recovers his consciousness; but if a little care is taken to designate the condemned teeth, either by blazing them with a hatchet, or by some other simple process, the danger that the dentist will exceed his duty may be rendered very slight. An equal degree of progress has been made in filling teeth. The dentist now-a-days drills out irregular cavities with a species of circular saw driven by machinery, and when he arrives at the point of stuffing a tooth with gold foil, he sits down to his work on a piano-stool, and wields a mallet and cold chisel with a mingled muscularity and tenderness which bring tears of gratitude and admiration to the patient's eyes. Thus, by the aid of science and skill, dentistry has been so greatly improved that a man can now bear to have a friend's teeth pulled or filled with comparative equanimity.

That the members of this enlightened profession should meet together in convention is both natural and proper. That they should subsequently dine together—or, in the language of similar associations,

should partake of a banquet—is also natural, and not intrinsically immoral. Still, a banquet of dentists must be a rather ghastly affair, and one calculated to strike terror to the waiter whose mind has been left unprepared for the spectacle. To the dental mind such a banquet as that of Monday evening last must necessarily have presented itself in the guise of a competition trial of artificial teeth. Each guest undoubtedly endeavoured to test his teeth upon the toughest substances, and the innocent waiter must have wondered why so many gentlemen insisted upon calling for mince pie immediately after, or even prior to, soup. His wonder doubtless increased on hearing tooth after tooth break into fragments on the hidden reefs and bowlders of the experimental pie, and on perceiving the exultation with which each possessor of unbroken teeth greeted the mishaps of his rivals. Between the courses he shuddered to see full sets of teeth passed up and down the table for inspection and comment, and when the cautious dentists with one accord changed their teeth before indulging in hot coffee, and either removed them altogether prior to lighting their cigars, or else put on old and loose sets so that they might smoke with ease and comfort, the horrified waiter probably fled howling from the banquet hall. He did not wait to hear the President propose as the first regular toast, “The Health of the Alveolar Processes,” or listen to the eloquent tribute paid by some distinguished dentist to the ingenious inventor who first applied the principle of hydraulic mining to the excavation of human teeth. That these are the distinguishing features of an Odontological banquet, it is hardly necessary to demonstrate. The universally known fact that every dentist proves his faith in his own work, by wearing teeth exclusively of his own manufacture when applying for his diploma, is exceedingly creditable to the profession, and if the dentists did not display the merits of their respective teeth at a professional banquet, they would be lacking in that earnest devotion to dentistry which so honourably distinguishes them.

Royal College of Surgeons of England.

EXAMINATION FOR DIPLOMA IN DENTAL SURGERY.

February 1, 1876; 2 to 4 o'clock p.m. N.B.—The candidate is required to answer at least one of the two questions both on Anatomy and Physiology, and on Pathology and Surgery.

ANATOMY AND PHYSIOLOGY.

1. Describe the origin, course, and insertion of the temporal muscle; and give its relations and action. State the sources from which it receives its vascular and nervous supply.
2. Enumerate the glands pouring their secretion into the mouth; and describe their structure, and the nature of the secretion of each.

PATHOLOGY AND SURGERY.

1. From what parts of the jaws may exostoses grow? Describe their structure.

harshly on my, perhaps, too sensitive ear, especially when I consider that the frank acknowledgment that "our American cousins seem to head us here as elsewhere," has never been heard except under peculiar circumstances, similar to the present.

In this case the "poor American" cannot bear away the palm nor "head us," for fine *quality* has greater weight and influence than gross *quantity*, and in this instance, at least, our British cousins are entitled to all the *superiority*.

F. M. G.

The Dental Profession.

SIR,—My attention has been directed to a notice which appears in your journal of to-day, of a meeting of some surgeons practising dental surgery, and at which it was unanimously constituted a Society. There is one paragraph in that notice which, as it reads to me, may be possibly misunderstood, for, worded as it is, an idea might be conveyed that the possessors of the L.D.S. diploma, or certificate of competency granted by the Royal College of Surgeons, are classed equally with those persons who possess no qualification whatever. This, I can safely say, was not the intention of any one of those present on the occasion referred to; and, moreover, I feel satisfied that the writer only alluded to spurious degrees, and never intended to cast a slur on a measure which at the time was urgently needed, and which, in its results, has proved highly beneficial as regards the education of those who have passed the ordeal and entered the ranks of dental practitioners. Considering the state of the profession and the violence of opinions existing at the time, the promoters of the scheme, after much earnest consideration, came to the conclusion that its fulfilment offered the only path by which educational improvement and unanimity could then be reached. Whether the standard of qualification is not now capable of still further improvement is another question. As regards the new society itself, a few words will suffice here—the honour, character, social status, and advancement of the dental branch of the profession are the sole objects in view.

I am, Sir, your obedient servant,

January 25th, 1876.

ONE OF THEM.

[To the Editor of "The Lancet."]

THE SAUNDERS SCHOLARSHIP.

WE are requested by Mr. Ibbettson to correct a mistake that appeared last month in the list of contributors to the Saunders Scholarship Fund. Mr. Hugo's initials should be S. G. J. instead of H. G. I.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM JANUARY 1ST TO JANUARY 31ST, 1876.

Extractions.	Children under 14	-	-	-	-	369
	Adults	-	-	-	-	530
Under Nitrous Oxide	-	-	-	-	-	190
Gold Stoppings	-	-	-	-	-	216
White Foil ditto	-	-	-	-	-	29
Plastic ditto	-	-	-	-	-	188
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	43
Miscellaneous Cases	-	-	-	-	-	210
Advice Cases	-	-	-	-	-	117
Total						1892

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of MESSRS. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE Monthly Review or DENTAL SURGERY.

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The Rev. Sir EDWARD REPPS JODRELL, Bart.

To Messrs. FELTOE & SONS, 27 ALBEMARLE-STREET, W.

When at Sall I received an Analytical Report of your SPÉCIALITÉ SHERRY, and you must forgive me for saying that at first I regarded the whole matter as a most egregious piece of humbug. Having, however, tasted the wine in question, and found it most agreeable to the palate, I determined, on my own responsibility, to have it analysed for myself, having fully also determined previously to expose any hoax *pro bono publico*, or to give you the benefit of the Analysis should it turn out in your favour. I have the pleasure to forward to you Professor Redwood's (of the Pharmaceutical Society of Great Britain) Analysis, which says more than I can express. I am very particular as to the wine I drink, and as I have been hitherto buying every-day Sherry at 60s. a dozen, I am rejoiced to find now that I can purchase wine of equal strength and superior bouquet at half that price. This should be known to the general public, and you can make any use you deem proper of this letter, and also of Professor Redwood's most elaborate Analysis.

Yours faithfully, (Signed) EDWARD REPPS JODRELL.

THE "SPÉCIALITÉ" SHERRY.

(REGISTERED).

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"Founded on its FREEDOM FROM ACIDITY AND HEAT."—British Medical Journal.

"To the meal of a patient suffering from DYSPEPSIA it would be VALUABLE."—Medical Times.

"FREE from the ACIDITY commonly found in SHERRY."—Public Health.

"A PALE SHERRY OF LIGHT CHARACTER AS REGARDS THE ALCOHOL."—Medical Press.

"FREE from MINERAL ACID or INORGANIC MATTER not yielded by Grape-Juice."—Professor Redwood, Analyst to the Pharmaceutical Society of Great Britain.

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"UNADULTERATED GRAPE JUICE."—United Service Gazette.

"THE OLD-FASHIONED NUTTY FLAVOUR."—Court Journal.

"A GENUINE WHOLESOME FLAVOUR."—The Freemason.

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BRIGHTON (57 North Street), and
BRISTOL (34 and 35 Prince Street).

THE MONTHLY REVIEW

OF

DENTAL SURGERY.

No. X.

MARCH, 1876.

VOL. IV.

Real Progress.

Amidst all the agitation that is now taking place in the Dental Profession, it is a source of unqualified pleasure to find that the subject of Dental Education is occupying a most prominent place. Without attracting as much public attention as some other matters, it is yet steadily advancing, and the decision of the Royal College of Surgeons that, after October 1st, 1877, the Preliminary Examination in Arts shall be compulsory for every Student taking the Dental Diploma of the College, is by far the most useful measure of advance and reform that has taken place during the last ten years.

Since the establishment of the "MONTHLY REVIEW OF DENTAL SURGERY," we have steadily and persistently advocated the compulsory examination in Arts; and it is therefore with very great satisfaction that we find a measure that we have so long pressed upon the consideration of the College finally adopted.

There is no question that at some future time the Dental Profession will be in a position to demand from the Legislature the restriction of Dental Practice to properly qualified practitioners, but that day is certainly distant.

Still, the first step towards the attainment of such an end is the great impulse that will be given to Dental Education by the recent action of the College of Surgeons. When Dental Surgery, as a speciality, is brought up to the same educational standard as General Surgery, Dental Surgeons will not only be able to ask, but will be in a position to demand the like privileges and protection as their fellow practitioners in the domain of Medicine.

In the early history of a profession the educational standard must be the first step towards corporate rights. When a high degree of technical knowledge is possessed by the members of any body, legislative protection and prohibitory powers over the unqualified must follow as a matter of course. Hence it is that we consider the examination in Arts being made compulsory is a far more certain step towards Dental Reform than the endeavour to register everyone calling himself Dentist, irrespective of social position or professional competency.

The Month.

THE "LANCET" AND THE ODONTOLOGICAL SOCIETY.

We are glad to see that Mr. Turner, in a very able and spirited manner, has vindicated the position of the Odontological Society from the pseudo-editorial attack made upon it by the *Lancet*. That journal is generally well informed on the topics of which it treats, it is therefore very unfortunate that it should be found tripping on a question of so much importance to the Dental Profession as the functions of the Odontological Society.

THE FUNCTIONS OF THE ODONTOLOGICAL SOCIETY.

It is satisfactory to find that we are not singular in our opinion that the Odontological Society is bound to exercise its political functions. The letters that appear in our correspondence column fully testify to the importance of the question, and the light in which it is regarded by many members of the Profession.

THE MANCHESTER REFORM PARTY.

We hear on good authority that a large number of the practitioners in Manchester and Liverpool are by no means prepared to allow the recent action of the Odontological Society to pass by without protest. We trust, however, that personal feeling will not be permitted to take the place of public policy.

LIVERPOOL DENTAL HOSPITAL.

We are quite sure that the provincial members of the profession will learn with satisfaction that the Council of the Royal College of Surgeons has recognised the practice of the Liverpool Dental Hospital as qualifying for the Dental diploma. Wherever there is a provincial Medical School, we should also have a recognised Dental Institution. It is manifest that there can be no shorter road to Dental Reform than the fullest possible opportunity for obtaining Dental education.

NATIONAL DENTAL COLLEGE.

We understand that the opening Session of the National Dental College will (subject to the approval of the Royal College of Surgeons) commence on the 1st of May. We believe it is the desire of the promoters of this institution to do all in their power to assist in the effort now being made to raise the standard of Dental education. With this object in view, special arrangements have been made for holding classes in the College to prepare students for the preliminary examination in Arts. Mr. Oakley Coles will temporarily act as Dean.

THE NEW DENTAL SOCIETY.

We understand that the Society of Surgeons practising Dentistry is formally founded, Mr. Cartwright being the first President, and Mr. Salter, Vice-President. We wish it a useful and prosperous career.

ODONTO-CHIRURGICAL SOCIETY.

This society opened its Session on Monday, 13th March, with a paper by Mr. Campbell, L.D.S. (Dundee), "On the Preparation of the Mouth for Artificial Dentures." The annual dinner of the members of the society, and L.D.S.'s, took place on the same evening at the Douglas Hotel, Edinburgh, with Mr. D. Hepburn, L.D.S., in the chair, Mr. Williamson, L.D.S., croupier.

MR. GEORGE WARD.

We have received a long letter from Mr. George Ward, of No. 188 Oxford-street, in reply to our correspondent, "L. D. S.," whose note appeared last month. Had Mr. Ward's communication been of the

same length as "L. D. S.'s," we would gladly have inserted it ; but, as it refers at considerable length to other matters, he must be contented with our publishing only so much of it as deals with the question asked by L. D. S.—

"My attention was drawn for the first time last Saturday to a letter in the MONTHLY REVIEW OF DENTAL SURGERY of the present month, wherein my name rather prominently figures, and wherein, also, a certain mysterious "L. D. S.," that modern, very modern, and *rara avis* of dentistry, calls for an explanation of the initials M.D.S., supposed to have been used by me. All I have to say to that is I know not anything whatsoever of them, never having used such."

We referred Mr. Ward's letter to "L. D. S.," who writes :—"If I have done Mr. Ward any injustice I much regret it. I spent nearly a quarter-of-an-hour admiring his very ingenious advertisement, and most certainly was under the impression that I also saw M.D.S. somewhere about the place."

THE ANNUAL DENTAL DINNER.

The following Gentlemen constitute the Committee of the Annual Dental Dinner :—

John Tomes, Esq., F.R.S.	} For London.
Edwin Saunders, Esq.	
James Parkinson, Esq.	
G. Buchanan, Esq., of Glasgow.	} Provincial Representa- tives of the three Kingdoms.
J. E. Palmer, Esq., of Peterborough.	
J. O'Duffy, Esq., of Dublin.	

And the following office-bearers for the time being :—

The Chairman of the Committee of Management of the Dental Hospital—Campbell de Morgan, Esq., F.R.S.

The Hon. Sec. to the Dental Hospital—G. A. Ibbetson, Esq.

The Dean of the School—T. A. Rogers, Esq.

The President of the Odontological Society—C. Vasey, Esq.

The Senior Officer of the Medical Staff of the Hospital—Thomas Underwood, Esq.

The Chairman of last year's Dinner Committee—C. J. Fox, Esq.

C. S. Tomes, Esq.	David Hepburn, Esq.
Ashley Gibbings, Esq.	James Merson, Esq.
W. F. Forsyth, Esq.	Frederick Canton, Esq.
G. Parkinson, Esq.	

This Committee has elected Mr. James Parkinson as their Chairman, and Messrs. J. Merson and G. Parkinson as Hon. Secretaries.

It has been determined to hold the dinner at St. James's Hall, on March 16th, 1876, at 6.30 o'clock. Tickets to be one guinea each, steward's fee five shillings.

On the Microscopical Structure of Fossil Teeth from the Northumberland True Coal Measures.

By W. J. BARKAS, M.R.C.S.E., L.R.C.P., Lond.

CHAPTER XX.

(Continued from page 398.)

,Genus.—Rhizodopsis (Huxley).

The remains of this genus are very prolific in the Northumberland Coal Measures, the fishes being occasionally obtained intact; we are, therefore, quite *au fait* with regard to the general characters of the genus founded by Professor Huxley. There are only two species that have been named, *Rhizodopsis granulatus* and *R. sauroides*; the latter is the variety that is found in this district, and it is to the teeth and jaws of that species that I shall devote this paper; in fact, as far as my knowledge extends, only the scales of *R. granulatus* are known. In the "Quarterly Journal of the Geological Society of London," Volume XXII., is an excellent description of the external characters of this fish by Dr. Young, and in the "Transactions of the Northumberland and Durham Natural History Society," Volume III., some further details are given by Messrs. Hancock and Atthey; Mr. T. P. Barkas, F.G.S., also gives a slight sketch of the different parts, illustrated by lithographs, in his "Coal Measure Palæontology;" this is all the direct literature we have at present concerning this genus externally, but the microscopical structure of the bones, scales, and teeth has not been much dwelt upon; Mr. Atthey and Mr. Barkas, however, make some slight reference to it. Professor Owen has indirectly given some excellent descriptions and illustrations of the histological characters of these teeth in his "Dental Characters of Carboniferous Fishes," for the following supposed new genera and species therein mentioned are undoubtedly teeth of *R. sauroides*, a fact first pointed out by Messrs. Hancock and Atthey; they are *Dittodus parallelus*, *Ganolodus Craggsii*, *Characodus confertus*, and *Gastrodus præpositus*; the last named the Professor considered to be a Batrachian. Professor Williamson has detailed the minute structure of the scales in "The Transactions of the Philosophical Society for 1849," under the designation of *Holoptychius sauroides*, and Mr. Salter figures similar scales in the third part of 'The Iron Ores of Great Britain' in "The

Memoirs of the Geological Survey," as scales of *Rhizodus granulatus*.

Before entering into the external and microscopical characters of the jaws and teeth, I shall give a brief *resumé* from the works of the above authors and from my own observation of the generic characters of these fishes. They vary very much in length; according to Dr. Young, from two to fifteen inches, but their average length is about five inches. I certainly have never seen any measuring either of the extremes mentioned; five inches is, however, about the average length of my specimens. Their greatest depth is at the pectoral arch, and from this point the body tapers towards the caudal extremity, the head is depressed, orbits placed well forward; gape of jaws rather wide; maxilla in one piece and furnished with small conical teeth; mandible and premaxilla contain two rows of teeth; principal and posterior jugulars, but no trace of lateral or median plates; three occipitals; paired fins subacutely lobate; two dorsal fins; dorsal and ventral fins have two rows of fulcral scales, similar to those in *Megalichthys*; tail heterocercal; scales cycloid, but they vary from an orbicular to an elongate-cordate form in different specimens, they also differ much in size, from one quarter of an inch to one inch; the centre of the scale is occupied by a small raised boss; scales and head-bones sculptured; vertebræ numerous and completely ossified. From this *resumé* it will be noticed that the fish possesses all the characters ascribed to the Cycliferous division of the Glyptodipterini, and it is well that we have thus been able to establish the position of this genus, because none of the other genera that I have placed in this family have been found intact, but their detached scales, jaws, vertebræ, &c., are very closely allied to those parts of *Rhizodopsis*.

The maxilla (fig. lxxxii.) is an exceedingly thin bone, and quite flat; it approaches very closely to the form of the maxilla of *Megalichthys*, being very narrow in front and suddenly bulging out behind; these two parts occupy about equal parts of the bone. The superior border of the anterior narrow extremity runs almost parallel with the alveolar border; the superior margin of the dilated extremity rises abruptly from the narrow portion, then, describing a strong curve, it bends suddenly towards the posterior articulation, where it terminates in a rounded extremity; instead of being curved this border is, in some specimens, rather pointed. It

is said by Mr. Atthey that an articulating process springs from the superior border of the narrow portion of the maxilla, but I have never been fortunate enough to see it. The inferior, or alveolar border, is straight (in fig. lxxxii. it has been distorted), and bears one row of small conical teeth, which are, as a general rule, arranged at very regular intervals, but frequently they are irregularly placed in pairs, as though they have been crushed together during development. It was upon such a specimen that Professor Owen founded his supposed new species, *Dittodus Parallelus*. The external surface is covered with numerous short, fine, wavy ridges, which course about in all directions, giving the surface a reticulated aspect; in many places this surface is minutely tuberculated, the tubercles occasionally running together to form a ridge. The internal surface is smooth, so much so, in some examples, as to have the appearance of being enamelled, but such a coat is never present on that aspect, nor have I detected any such layer on the external surface. The size of the maxilla varies very much, the largest specimen in my possession measuring one inch antero-posteriorly.

The premaxilla (fig. lxxxiii.) is long and narrow, and is a thicker and stronger bone than the maxilla; it is broader anteriorly than posteriorly, and is also thickest at that extremity. The superior border gently curves downwards from the anterior extremity towards the posterior end, where it forms a point with the inferior margin. The alveolar border is straight and continuous with that border of the maxilla when they are *in situ*. It is furnished with a regular row of small teeth along its whole extent, and near the distal extremity is situated a single laniary tooth, but between this tooth and the articulation there are one or two small teeth; this laniary tooth is placed more internally than the serial teeth. The external and internal surfaces correspond to the same aspects of the maxilla. The longest premaxilla that I have examined measured two and a-half inches. Mr. Atthey has described and portrayed a premaxilla in the Transactions of the Tyneside Naturalists' Field Club, volume VI., as a jaw of *Holoptychius*, and Professor Owen has founded *Ganolodus Craggesii* upon a distorted specimen. The mandible (fig. lxxxiv.) bears a slight resemblance in its outline to the premaxilla, being a long narrow bone, but it may be distinguished by its greater size and strength, and even by its form, when found perfect, for it does not termi-

nate in a point posteriorly. The anterior portion of this jaw is much thicker than the posterior, and has a beautifully rounded contour; the posterior extremity is more square and irregular. The inferior border runs nearly parallel with the alveolar margin, and is slightly wavy. The superior margin is supplied with two sets of teeth, the external row being formed of a great number of small teeth, and the internal of from four to five laniary teeth arranged at very regular intervals; the drawing I have given shows four such teeth, and Mr. Atthey has described a mandible bearing five; the anterior laniary tooth is situated, like the single tooth in the premaxilla, sufficiently far from the symphysial extremity to allow one or two small teeth to be interposed. The external surface resembles that surface of the maxilla in its ornamentation, but there is, perhaps, a greater tendency towards tuberculation. The longest mandibular bone in my cabinet measures three inches.

The teeth are, we have seen, of two sizes, but in all other respects they are in agreement; they are conical, terminate in a sharp point, and between the base and the apex they have a slight curve; the base is slightly plicated from the infolding of the dentine peculiar to this family of fishes; the external surface is smooth and enamelled, but in most cases the lowermost portion of the tooth is covered with strongly marked longitudinal striæ which divide and subdivide as they proceed towards the apex, the branching striæ inosculating somewhat freely. The small teeth of the premaxilla and mandible are sometimes crushed together with those that I referred to in the maxilla.

The microscopical appearances of these teeth have been very fairly described by Professor Owen, though, as I have said, his descriptions applied to what he considered to be new teeth. A vertical section of any of the jaws of *Rhizodopsis*, taken through the centre, will show the mode of the termination of the teeth in the bone substance, the structure of the bone, dentine, and enamel, but it is not probable that the true form of the tooth or pulp cavity will be obtained on account of the curvature of the teeth, a special vertical section must be made for the purpose of examining the two latter characters.

The bone, when examined in such a section, "shows plainly the medullary or Haversian canals, the laminae, and the intervening lacunae or bone-cells, with their radiating

tubuli; all in proportion and pattern according to the Batrachian type, and herein very closely resembling that in the Parabatrachus (?) of the Carlisle coal, and the Dendrosteion of the Nova Scotia coal-fields. As the Medullary canals are more curved and irregular at and near the alveolar part of the jaw-section, the laminae partake of such character, and the bone-cells are arranged along similar irregular curved lines: here the bone-cells show a long diameter of $\frac{1}{16}$ of an inch, a short diameter of about $\frac{1}{32}$ of an inch. In the lower part of the jaw the medullary canals are chiefly longitudinal, and the bone-cells lie with their long axes therewith parallel. At this part of the jaw-section, the bone-laminae alternate with medullary canals or vacuities, of similar or greater vertical extent, both affecting the longitudinal course: some of the laminae have not more vertical thickness than suffices for a single bone-cell, or two. In these lamellae the line of section through the bone-cells shows their flattened sides to be parallel with the periphery of the longitudinal canal, and their longer diameter is in the direction of the length of the canal: their shorter diameter is less than in the bone-cells exposed by the more oblique sections of the more irregular alveolar canals; for whilst the long diameter of the lower or longitudinal bone-cells may be $\frac{1}{16}$ of an inch, the short diameter is frequently $\frac{1}{32}$ of an inch: but in no instance do the bone-cells present that extreme length which characterises them in the recent and extinct Sauroid fishes. From the foregoing particulars of structure I infer that we have in *Gastrodus* evidence of a minute hair-breathing Batrachian." This is Professor Owen's description of the bone tissue of *Gastrodus prepositus*; and it will be noticed that he compares it with the structure of two supposed Batrachians. Now one of these, *Parabatrachus*, I mentioned while speaking of *Megalichthys Hibberti* was the inner surface of a maxilla of the fish, and not a Batrachian at all, therefore the comparison is against Professor Owen and in favour of the so-called *Gastrodus* being piscine; at any rate, the quotation I have given is exactly the description of the osseous structure of a jaw of *Rhizodopsis*; but the bone tissue of this fish varies in its characters according to its size and age, for in small or young fishes the lacunae may only measure $\frac{1}{32}$ of an inch in length, or there may not be any, and it was from such a specimen that the osseous tissue of *Dittodus parallelus* was

detailed. While referring to these false genera of Owen, I may as well finish those whose bone-structure is similar to that of *Rhizodopsis*. *Characodus confertus* is merely a jaw, probably a premaxilla, of *Rhizodopsis* from which the teeth have been ground or broken away from their sockets. I have a beautiful section of a premaxilla that exhibits all the characters ascribed to *Characodus* in one-half of its length, while the other moiety possesses the teeth in a greater or less degree of perfection.

The teeth are composed of dentine, covering which externally is a thin layer of ganoine or fish enamel. "The dentinal tubules (Owen on *Gastrodus*) have a diameter of $\frac{1}{10000}$ of an inch, with intervals of from three to four of their diameters. Throughout three-fourths of the crown, from the base, they present a primary curve gently concave pointward, extending to within one-fourth of the periphery of the dentine, when the direction of the branches they there resolve into affects the opposite curve: their general direction is outward, and a little upward, changing gradually when near the apex to the vertical position; but some of the tubuli near the apex make a strong and short curve, concave pointward, and are then continued vertically." In *Dittodus* he states that the first primary curve of the tubules is convex towards the apex; but this does not show any difference in the genera, because in my sections of *Rhizodopsis* I find the tubules sometimes presenting the first primary curve in one direction and sometimes in the other, and occasionally they run directly at right angles to the periphery; nor do the diameters of the tubules maintain a standard of $\frac{1}{10000}$ of an inch, they are sometimes as small as $\frac{1}{20000}$ of an inch.

"Each tooth (of *Gastrodus*) is attached to a low process of the alveolar border, which is hollow or cylindrical, with the dentinal base of the tooth inserted into the mouth of the cylinder; and the dentine is thinned off as it descends, adhering to the inner surface of the process." This description applies solely to the small teeth of *Rhizodopsis*, for the laniary teeth are inserted into the jaw in the same manner as are the teeth of *Megalichthys*, so it will not be necessary to enter into any detail concerning its roots. There is one point, however, in which the roots of the teeth of these two fishes differ, the roots of *Rhizodopsis* do not blend with the osseous tissue, but terminate abruptly.

A transverse section through the body of a tooth shows that it is circular in outline, and that the pulp cavity corresponds with the external contour; a similar cutting of the base presents the convoluted appearance exhibited in fig. lxxviii., an illustration of the plicated base of *Megalicthys*.

The enamel is a very thin layer, and it does not present any apparent structure, being perfectly clear and transparent when examined in section. This coal is just as often wanting as not, the teeth situated in the same jaw differing in this respect, some being enamelled and others not. This absence of the enamel is not a result produced by the operation of grinding the section, but, in all probability, it was caused by excessive use during life.

Upon Artificial Disfigurement of the Teeth among Different Nations.

ANTHROPOLOGICAL SOCIETY, Göttingen,

July 17, 1875.

Herr von Ihering, after a brief sketch of the principal artificial disfigurements of the teeth in use among different nations, partly for the requirements of their health, partly from hurtful toilet operations, spoke as follows:—

The disfigurements of the teeth are substantially of three kinds: 1st. Painting the teeth with red or black colours (Bornu Birma). 2ndly. Knocking out one or more of the incisors in the upper or lower jaw, practised among certain tribes in Australia and Central Africa. 3rdly. Mutilation of the form of the tooth whilst preserving the tooth itself. Many tribes from the interior of Africa cut the incisors with the chisel in such a manner that they are sharpened to a point, or so that the point comes in the centre of each incisor, or by apparent prolongation of the edge, on one side or both, they are double pointed.

In the islands of the Malay Archipelago we find filing between teeth (almost always regularly coloured by betel-nut-chewing) in two typical forms:—

1st. Removal of the enamel from the entire front surface of the crown of the incisors by horizontal filing and polishing, a kind of mutilation characteristic of the Malays of the East Indian Archipelago,

2nd. Filing in such a manner that the enamel is removed from the front surface with the exception of a three-sided portion, of which one side represents the incisor. The tooth is generally so pointed from the removal of the side part, that the remaining enamel of the tooth has a rhombic form. This form is only found upon four islands, Java, Bali, Madura, and Celebes, and has not been observed until quite recently, for Virchow and A. B. Meyer considered the pointed filing of the teeth the characteristic of these islands. The Malay skull, mentioned by Virchow in the Wiesbaden collection, belongs to the same group. Meyer's idea that this second form of filing occurred amongst those aborigines fallen into slavery in the Mentavey island is most improbable, as Von Ihering had met with this example in entirely separated collections, in all of which these four islands were given as their home.

We must, therefore, conclude that these deformities are, or have been, native to these islands, although at present no conjecture has been brought forward to which nation it is peculiar, or whether it is a sign of position in life.

Correspondenz blatt für Anthropologie, Ethnologie und Urgeschichte, October, 1875.

VIERTELJAHRSSCHRIFT.

A Case of Dysmenorrhœa Cured by the Extraction of a Tooth.

By WLADYSLAW ZICLINSKI, Warsaw.

About eight months ago a young married woman, about 20 years of age, delicately built and ailing, came to consult me. She complained of toothache in the lower jaw, which arose from a wisdom tooth. Upon examining the mouth and teeth, I found no reason for such pain, except that the tooth in question was not fully erupted, and seemed to have scarcely room enough. Under strong pressure it seemed sensitive.

On the other hand, it was perfectly sound, white as ivory, no spot whatever, and the temperature of the face was normal; neither the face nor gums were swollen. I decided to incise the gum over the tooth, as it was more or less tense. As the tooth also was very slightly tender

under finger pressure, I ordered a leech to be put to the gum near the tooth.

The patient did not like my advice, and besought me to take the tooth out. She remarked that the tooth had given her pain for months. As the tooth had grown somewhat irregularly, and might be more troublesome than useful when fully erupted, I allowed myself to be persuaded to follow the patient's advice, and agreed to the operation. The tooth was extracted, and the patient left me.

The next morning early I was awoke by the husband, who begged me to come immediately to his suffering wife. I went directly and found my patient in bed, with a pale anxious countenance, and a pulse up to 120. Slight parotitis had occurred, and irritation in the throat. In answer to my question what was the matter with her, she replied that her throat hurt her and she could not swallow. She feared that she would be choked by any further swelling. Of course I soothed the patient, and told her to keep in bed. I ordered tincture of iodine to be painted over the parotid, and prescribed a borax gargle. On leaving, I was called back by the husband, who told me that his wife wished to ask me something. She then asked me if she could use the prescribed medicine, as she had suffered from dysmenorrhœa for some months very slightly, but the previous night menorrhagia had come on. Of course I let her use what I had previously ordered, and insisted on her keeping her bed. I advised her to take cooling acid drinks, and should the flow increase or continue, to call in medical assistance.

On the second day I again visited the patient. I found her in bed, pale but cheerful; I advised her to still keep in bed, and to endeavour to avoid all mechanical movement or physical excitement. I then ordered continued use of the gargle, and again painted the parotid, which was not so swollen. The patient had not had recourse to medical advice. The flow had very much decreased, and took the usual catamenial course.

Since this occurred I have frequently seen the patient, and always receive a satisfactory account of her health. Since the tooth was extracted, menstruation has been regular.

I have described this case, as I have not read of anything similar. In one of Professor Albrecht's (p. 126, vol. 2) I have read that exactly opposite results arose. Professor Albrecht quoted the observations of Dr. Lieber. Lieber mentions

that in the case of a married lady, 30 years of age, for whom he extracted a tooth during the menstrual period, the flow was arrested, and in the place of it a violent bleeding of the alveolus occurred, which lasted twenty-six hours. Seeing, therefore, the case observed by me was exactly the reverse, I wished to call the attention of my colleagues to it.

VIERTELJAHRSSCHRIFT.

A Dental Register.

By JAMES STOCKEN, L.D.S., R.C.S., Assistant Dental Surgeon to the National Dental Hospital.

Having been requested by you to furnish particulars of my "model register," I have now the pleasure of doing so.

I have had the plan in operation more than a year, and can testify to its advantages over all others with which I am acquainted. It had long appeared to me there was wanting some simple arrangement of this kind, whereby we might register the particulars of our mechanical cases, prevent frequent communications with our assistants relative to the work to be done, avoid misunderstandings as to the instructions given or implied, also guard against any error arising as to the right number of the case, and last, but not least, effect a saving of valuable time. In the compilation of my register, these conditions I have endeavoured to fulfil, and should my professional brethren take that view of the matter, I shall soon place the register within their reach.

By reference to a blank sheet of the register, it will be observed in the first line provision is made for the consecutive number of the model, the colour number (to designate which I make use of Ash's shades) and the date on which the impression is taken.

2nd line—For name and address of patient.

3rd line—For particulars of case as regards material, etc.

4th line—A compound line for designating the number and position of the Teeth required, also the kind of Teeth, these being indicated by characters thus—

V Vulcanite.

I Flat.

O Tube.

It will be observed I have selected letters corresponding to the initials of the Teeth, thus; M. Molars, B. Bicuspid, etc., etc.

5th line—For date, etc., when case will be required for trying in.

6th line—Number of Teeth.

7th line—For date, etc., when case will be required finished; also for charge to patient, this being inserted in cyphers, and in the duplicate omitted altogether.

These duplicate sheets (250 in number) are bound up in the form of a book, with an alphabetical index. In this index the name is entered, and in same line the number, so that the case can at any moment be referred to without any trouble whatever.

Periostitis Dentalis.

By Dr. JULIUS SCHEFF, Vienna.

From the *Wiener Medizinische Presse*.

(Continued from page 418.)

The peridentium is an exceedingly vascular membrane, and therefore very liable to inflammation. In periostitis we recognise three different stages. The first stage is characterised by a feeling of dulness, and especially by the apparent lengthening of the affected tooth. Of whatever little value both these symptoms may be in a scientific aspect, they are always present in teeth affected by periostitis, and may be considered as the most important and characteristic symptoms of the beginning of this disease. After a short time, changes in the gums appear; they become swollen and of a dark red colour. At this stage the periosteum of the affected tooth is reddish, can be torn off in shreds, and under the microscope shows an increase of elements. Should there be no retrogression of the inflammation, it passes on into the second stage, which is characterised by the extension of the inflammation from the peridentium to the membrane lining the root cavities. At the apex the periosteum is loosened by the exudation on each side; the tooth becomes longer and looser as it is pushed upwards out of the alveolar depression. The swelling of the surrounding soft parts increases, as also the sensitiveness, increased especially by pressure upon the gingival mucous membrane; if there be no decrease of the symptoms just mentioned, the third stage appears, characterised by the transformation of the increased

elements observed in the first—the formation of pus in the exudative sacs. Besides, small granular cells forming the connection between these are formed. The swelling and pain have now attained their maximum; the latter gradually decreases, and the former remains until a means of exit for the pus is found. This flows either through the cavity of the pulp, caused by some pre-existing caries, and is discharged in this manner, or after a longer time, alongside the loosened tooth, or is finally removed artificially.

The result, whatever it may be, depends upon the stage of the inflammatory action. So long as no suppuration has taken place, a *restituto ad integrum* may be hoped for. If pus be already formed, the changes affect the periosteum, both of the tooth and the jaw-bone.

The periosteum is then thickened and can but very seldom re-adapt itself to the tooth; the latter remains in its loosened condition; the pus may after a time be re-absorbed, as also the membrane by which the root is surrounded; or fatty metamorphosis may take place. The tooth itself frequently atrophies with a hypertrophy of the cement substance; an absorption of the root occurs, or the tooth may itself die (as shown by its loss of colour and looseness) and fall out. Other very frequent terminations are fistulæ and necrosis, the consideration of which, however, will necessitate a special article.

In periostides, accompanied by inflammation and suppuration of the surrounding soft structures, not only the affected organ suffers, but the entire system sympathises. Fever, loss of appetite, sleeplessness, the common companions of periostitis dentalis, are the causes which most frequently compel the patient to seek the physician's aid.

As to therapy, I shall endeavour to confine myself to the most practical points.

The fact is, we have no radical means upon which we can rely to cut short the affection; nothing then remains but to employ those remedies which will, to some extent at least, mitigate the severity of the symptoms.

Whatever be the course adopted, it should be done exclusively during the first and second stages; during the third stage their effect is entirely null.

In the first stage I have a decided preference for the employment of cold both in the form of compresses, and internally by small pieces of ice, frequently repeated. This

is to be continued until the subsidence of the inflammatory symptoms or until there are positive indications of the commencement of the second stage.

If the pain and swelling increase, notwithstanding the cold, it is proof that the inflammation cannot be prevented, and we must then do our best by means of warmth to hasten it. This may be done by fomentations, cataplasms, and internally by various aromatics in the form of decoctions, such as the following:—

R. Decoct. altheæ, ℥vi.
Tinet. opii, ℥ss.
Syr. altheæ, ℥ss.

M.S. As a mouthwash.

Of this the patient may take a mouthful every quarter or half-hour, and let it remain for a few seconds. The temperature of this decoction must be regulated to a great extent by the taste of the patient.

If we find the slightest trace of fluctuation (proving the ingress of the third stage), an immediate incision, long and deep, must be made; we should not wait until the tumour had become softened, or has opened.—*British Medical Journal*.

Odontological Society of Great Britain.

ORDINARY MONTHLY MEETING, FEBRUARY 7TH, 1876.

C. VASEY, Esq., President, in the Chair.

The usual preliminary business having been disposed of, Mr. C. S. TOMES announced the contributions to the museum. Mr. Saunders had sent a series of lower jaws, cut in sections, showing the relation of the teeth to the alveolar processes; also a plaster model of the head of a microcephalic idiot. Mr. Gaine, of Bath, presented a specimen of phosphoric necrosis of the lower jaw, removed after death, and also a dilacerated tooth. The pharyngeal teeth of a large Indian fish had been sent by Mr. Brand, of Exeter. Mr. Harding had presented a specimen of salivary calculus, and some upper teeth, excessively worn by mastication and friction of the lower teeth. Mr. Charles Rogers had sent models of a supernumerary tooth occurring in both dentitions, five incisors in the temporary, and five in the permanent dentition; while Mr. Stocken had presented a

specimen of geminating teeth, and Mr. Clifford Eskell had sent a large dried dissection, showing the dissection of the nerves and vessels.

Mr. COLEMAN mentioned a plan he had adopted for recording cases. It was a sort of day-book, with columns for the name of the patient, the nature of the operation, the description of the tooth operated upon, paid and unpaid fees, current and private expenses, rent, &c. The book formed a very satisfactory reference in case of patients complaining of the fillings coming out of some particular tooth, as it often showed that it was a different tooth altogether which had been previously attended to. He had adopted the method for about fifteen years.

He also stated that at his request Mr. Merson, the House Surgeon of the Dental Hospital, had carried out twelve experiments in the application of pepsine paste, which had been introduced from time to time to their notice by Mr. Oakley Coles. Mr. Merson admitted that he had not, perhaps, carried out the details as Mr. Coles thought they should be, and that might account for the results not being so favourable as might be desired. The teeth were syringed or mopped out with tepid water, and then the pepsine, which was made into a thick paste with glycerine, and slightly acidulated with diluted hydrochloric acid, was conveyed to the teeth on a pledget of cotton, and finally covered over with cotton containing a solution of mastic. In three of the cases the pain was so great that the filling had to be removed. In three others in which the application had remained in the teeth forty-eight hours, there was more or less severe and intermittent pain, and upon the dressings being removed, the condition of the pulp appeared the same as it did previous to dressing. The teeth were re-dressed, and were examined at the end of twenty-four hours, but the condition of the pulp seemed in no way improved. In the remaining six cases the dressing was allowed to remain for five, six, or seven days. There was not much pain in the teeth, but there did not appear to be much improvement, either in the amount of the discharge or the condition of the pulp. These cases were such as he would have regarded as favourable for destruction by arsenic, which he preferred employing in connection with carbolic acid, acetate of morphia being occasionally added.

Mr. Merson said he would be glad to try further experiments

with the pepsine, but he had also been carrying out lately a series of experiments with several new agents, which had recently been recommended, such as the lacto-phosphate of lime, benzoic acid, salicylic acid, &c.

The PRESIDENT mentioned that in collating some thousands of cases at St. George's Hospital, he had adopted a register with only about a fourth of the number of spaces for every patient which were used by Mr. Coleman, and which much facilitated the labour of extracting the details.

Mr. STOCKEN exhibited a model Register for registering models.

The PRESIDENT, in answer to several inquiries that had been made, intimated that Mr. Tomes, senior, was much improved in health, and that he hoped soon to be able to attend the meetings. (Applause.)

The PRESIDENT then delivered the following address :—

GENTLEMEN,—By your unanimous suffrages you have conferred upon me a distinction among you that I value more highly than any academical or social honour possible in my position to attain.

The respect of one's professional brethren I hold in the highest estimation ; it is a crowning reward to any career, and worthy the ambition of any mind to gain ; I therefore, with heartfelt pleasure, thank you for the mark of confidence you have displayed towards me by placing me in this chair. The distinction I have not sought, in the ordinary acceptation of the word ; given as a proof of your approbation and regard towards me, I value it in the highest degree.

Up to the beginning of this century our profession held but a tenth-rate place in public estimation. John Hunter, in his treatise on the teeth, said : " In order that the reader may perfectly understand what follows, it will be necessary for him previously to consider and comprehend the anatomy and uses of every part of a tooth. Without such previous study, the Dentist will often be at a loss to account for many of the diseases and symptoms mentioned here, and will retain many vulgar errors, imbibed by conversing with ignorant people or by reading books in which the anatomy and physiology of the teeth are treated without a sufficient knowledge of the subject."

In his time our profession appeared before the world principally through the medium of the charlatan, mounte-

bank, and advertising fraternity, whose sole aim was the transfer of the contents of others' pockets into their own, who have left us no other inheritance than the history of their doings and the evil of their example, the contagion of which is still among us. In the midst of this evil crowd, however, a small stream of better men existed, who possessed the true spirit of professional life, and who sought to honour their calling; men whose example may be taken as the seed of the fruit this century has produced, exemplified in the life and work of such as Fox, Bell, Naysmith, Salter, Cartwright, and Tomes, bringing us up to the year 1857, when great general progress was discernible, and found expression in a general desire for professional organisation.

Under the chaotic circumstances that then existed, every proposed movement was necessarily one of considerable uncertainty, and without doing any sort of injustice to either one or other set of opinions, we may honour in our hearts those who took the initiative and the risk of stepping to the front.

Among the very foremost of these I place the name of Lee Rymer, who called the first public meeting together, and to whom is due the credit of beginning the first public organisation of the Dental profession in this country.

Much mental and physical work, patiently and freely bestowed, resulted in the formation of the Odontological Society of Great Britain. I have had a somewhat large experience of our profession, and I am delighted to say a rather extensive personal acquaintance with those who form it. I have given thought and study to the subject, and I have come to the conclusion that the objects for which our society was constituted were just those calculated in the highest degree to benefit our profession. I am free to express this opinion strongly, because it is no child of my brain; I was not one of its founders, I was only one of the invited members.

In other professions the higher members depend in a great measure on the patronage of the lower. The physician is called in consultation by the general practitioner, the counsel's opinion is sought by the solicitor, &c.; but in ours each member stands alone. Any original mode of practice, or valuable application of skill, when made public, places all on an equality as regards its advantages. It would

therefore, almost seem to be our individual interest to cultivate a strict exclusiveness.

Under such circumstances, the formation of a Society for the encouragement and diffusion of knowledge in dental surgery, and for the promotion of intercourse among members of the Dental profession was, to my mind, an act of high chivalrous patriotism. The aim and object being the exaltation of every one to a creditable professional standard, an example in honourable contrast to the selfish apathy of those who would appropriate everything and reciprocate nothing, or to those who, by their selfish reticence, publish their unsympathetic indifference to either the diffusion of professional knowledge or to the extension of friendly intercourse among their professional confrères.

There can be no doubt that through the influence of our Society a professional spirit is fostered in our ranks, a feeling of emulation raised, and a desire created to be distinguished by high-class attainments. Three of our members are Fellows of the Royal Society, one is an Oxford graduate, one an M.B. of London, one has obtained, by examination, the highest surgical qualification, and we have a second Fellow of the Royal College of Surgeons, by examination, on our proposal-papers. But, better than all these, we have now in the ranks of the profession 350 who possess, by examination, an honourable dental qualification, the only one, in fact, to be obtained in this country that can give any real dental status to the possessor; and it is a qualification stamped by the approval of, and granted by Royal Charter through the Royal College of Surgeons of England, the most exalted surgical college in the world. These are proofs, I think, good and true, that we fear not now having our dental knowledge tested by the ordeal of an examining board.

Shade of John Hunter hearest thou this.

There is one great purpose to be served by our Society that is lamentably overlooked by the majority of the profession.

If we shut ourselves in the privacy of our own rooms, attending only, like tradesmen, to the wants of those who call on us, touting for more customers by cards, circulars, hand-bills, and newspaper advertisements, we assume the position only of handicraftsmen, and to ask for legislative interference under such circumstances is simply to ask for a trade monopoly, which, in the present day, no statesman dare enter-

tain. If, on the other hand, through the agency of this Society, especially if supplemented by branches in our large seats of learning and population, such as Edinburgh, Dublin, Glasgow, and Liverpool, &c., we can show to the world we have the spirit of professional men, that the practice of our art requires special study, and should be tested by examination before being exercised on the public, legislative recognition would necessarily follow, not as a favour to give Dentists a monopoly, but as a duty to protect the public from the ignorant pretensions of the unqualified.

I have heard it said that country members and visitors at our meetings have often felt themselves but coldly received. I know the general feeling here to be that, as members, they are entitled to all the privileges of the Society, and to press attention on them would savour of patronage, at all times offensive to gentlemen meeting on terms of equality. In a Society, however, founded for the encouragement of intercourse among the members of the profession, I think we had better err on the side of cultivating, rather than on that of neglecting, this duty. No profession is so much in need of friendly intercourse as ours. All our successes are principally known to ourselves. Our failures go from us and are seen by others. We, therefore, cannot too carefully guard against thinking too highly of our own doings, or against depreciating the work of others.

There is a law of the Society granting a privilege to members which has seldom, if ever, been exercised; it runs thus: "Any member may make suggestions to the Council regarding changes in the laws by letter addressed to the secretaries." We now form the Odontological Society of Great Britain, yet by law 18 the President must be elected from the London members. I could name in a breath half-a-dozen non-resident members whose elevation to the chair would do credit and honour both to Society and profession. Suppose during the next year the secretaries were to receive 250 letters suggesting a change, how evidently strengthened the Council would be in proposing any such liberal measure.

In conclusion, I hope and trust that with your united assistance, during my year of office, I may be enabled to advance the objects for which our Society was founded—objects that I sincerely believe, if fully carried out, would do honour to ourselves, honour to our calling, and even to our country.

Mr. OAKLEY COLES, referring to the communication made by Mr. Coleman, said he desired to know more precisely the character of the cases in which the pepsine had been used. He pointed out that the cavity, instead of being syringed with water, should be cleaned out with acidulated water, such as dilute hydro-chloric acid, that the pepsine should be put in solid, not on wool; and that instead of sealing it up with mastie, the cavity should be sealed up with wax, as the presence of the spirit to some extent counteracted the action of the pepsine. He was exceedingly obliged to Mr. Merson for having made the experiments. His only regret was that there had been no previous report upon it, the material having been before the profession for over two years. He hoped that this would be only the first of a series of reports on therapeutic agents that might be brought before the profession by the officers of the Hospital.

Mr. UNDERWOOD, referring to Mr. Rogers' models of supernumerary incisions, mentioned a case of a child who had three perfectly well-formed central incisors in the first set.

Mr. COLEMAN, on behalf of Mr. Merson, thanked Mr. Oakley Coles for his explanations, and said that Mr. Merson would be glad to try another series of cases in the manner described by Mr. Coles, and to report to a future meeting.

We give an abstract of a paper which was then read by Mr. George Henry, upon "The Conservative Treatment of the Dental Pulp when Exposed *versus* Devitalisation." Having advanced some elementary reasons for preserving the pulp, and asserted that "the dental pulp is as the *medulla* to a bone, or the pith to a tree," Mr. Henry, criticising the opinions of several members who took part in the discussion upon Mr. Hutchinson's paper, read at the November meeting of the Society, said that the advocates for the use of arsenious acid for destroying the pulp are far from unanimous as to the pathological condition demanding such treatment; and, in quoting the opinions of gentlemen justly eminent, I trust my motive will not be misunderstood. For instance, Mr. Kirby "never applied arsenic without cutting off a portion of the surface of the pulp with a small spoon excavator." This vital condition of the pulp, admitting of such excision, to my mind, implied one amenable to conservative treatment. At any rate the treatment I am about to advocate would undoubtedly save such a one. One of the earliest pioneers of the conservative treatment of the pulp—by capping this organ—Mr. Thomas A. Rogers (*Vide* "Transactions of the Odontological Society," 1856-57, vol. I.), still holds the opinion "that when suppuration of any part of the pulp had been set up, it was necessary to destroy the whole pulp." But, as far as I am concerned, this suppuration of the pulp has long ceased to be a formidable barrier to its conservation, as I hope presently to show in typical cases.

Mr. Coleman "employed arsenic as an antiseptic in certain difficult

cases where only a small portion of dead pulp remained in the fangs." This is scarcely referable to conservative treatment; but I should be glad to know why he does not remove such dead remains by means of a barbed extirpator and syringing, rather than illustrate an undoubted antiseptic property in arsenic, it having the more serious and important property of destroying vitality, and its fluidifying action and consequent risk of spreading through the apical foramen of a tooth, rendering its use dangerous, especially in young persons. I cannot, therefore, realise that the power of arsenic to arrest decay and putrefaction in tissues can be advantageously availed of in connection with the teeth.

In connection with this part of my subject, one point—on which I think all are agreed—seems to assert itself, and should act as an additional stimulus to conservative effort, that is, the fact that cases of the complete death of the pulp are the most treacherous to treat; and I hope to win others to consider that disorganised pulps presented for treatment, through the timid procrastination and long-suffering of patients, are numerous enough, without our voluntarily adding to the number.

Presuming sufficient evidence has been adduced to show the desirability of avoiding the use of arsenic in our treatment of the living pulp, I hasten on to describe my treatment; prefacing this with a few words as to the most suitable material for capping or protecting exposed pulps, and the chemical agent best adapted for restoring and preserving the same, in my experience.

After trying most of the materials (for list of these materials, *vide* paper by Dr. Stellwagen in the *Dental Cosmos* for March, 1873) recommended for protecting the pulp, I have come to the conclusion that pink bibulous paper answers our purpose better than anything else, for the following reasons:—It is non-metallic; its softness and flexibility, when moistened, enables us to adapt it with precision; its absorbent property serves to retain an approved antiseptic application; it is easily placed *in situ*, and the pink colour is a help to correct adjustment in difficult situations.

Other materials may doubtless be employed with good results, but anything of a stiff nature, or that cannot be accurately adjusted, I believe must necessarily be an imperfect protector, and that bridging over a pulp is a mistake, since the slightest air-vacuum or atmospheric contact is favourable to septic influence, and therefore a hindrance to success.

With regard to the chemical agent most valuable to us at once as a coagulating caustic and a powerful non-irritating antiseptic—having tried nitric acid, chloride of zinc, nitrate of silver, creosote, and carbolic acid—I find the last-named alone meets all our requirements without drawback.

I have tried the pepsine paste and salicylic acid for the sake of their antiseptic property, but my success with carbolic acid has been so uniformly satisfactory, that I look upon it as the most valuable agent we can employ; believing that it converts the suppurating surface of the pulp into a healthy one, and promotes a normal action beneath the blanched film; how else can we account for the permanent comfort secured to teeth correctly treated with it? No doubt an explanation is to be found in the different action of carbolic acid "under cover," and when under atmospheric influence.

We will suppose that in preparing a cavity on the mesial surface of a first lower molar the pulp has been needlessly but accidentally exposed, and, perhaps, punctured. If pain be occasioned, this is readily alleviated with one of the favourite anodynes, such as aconite and chloroform, camphorated chloroform, or, better still, carbolic acid. The cavity finally prepared, a small pledget of wool charged with carbolic acid is kept in contact for from five to ten minutes, according to the extent of the exposure; for if the puncture is only sufficient to cause a slight bleeding, it will not be necessary to bare the pulp, but if a visible exposure has to be dealt with, this should be positively blanché, and so prepared for innocent contact with a protecting layer. This layer, consisting of a small circular or oval bibulous pad, moistened with carbolic acid, is carefully adjusted in juxtaposition with the blanché pulp, overlapping the aperture about half a line or more. This done, a few seconds suffice to mix the osteo, arranged ready to hand on a glass palette. Insert the same without undue pressure, hollow it out, and trim the edges, undercutting for the permanent metallic plug, which may be inserted as soon as the osteo has firmly set.

When disease has accomplished the work of a simple exposure, the treatment will be almost identical, apart from the previous existence of tooth-ache, which would involve temporising.

I will now describe my treatment of a suppurating pulp. This condition ascertained, I first cleanse the carious cavity, removing all trace of decay, and then syringe the suppurating surface of the pulp with carbolised warm water, which soon reveals to what extent the pulp has suffered. The next point is, perhaps, the most important that I have to urge, since to its omission may, I believe, be traced the numerous failures which are deplored by all who have earnestly desired to preserve such pulps, but have had to seek refuge in devitalisation. This next step, which may be best understood by studying figs. 1 and 2, is to cut down the surrounding walls of dentine, represented by the dotted line, so as to be on a level with the surface of the pulp, which may in all cases be accomplished with suitable sharp spoon excavators, and that invaluable aid, the burring engine, so securing the direct apposition of a temporary carbolic acid dressing. This I have rarely to renew more than twice, at intervals of a few days, governed by the perfection of the previous treatment, and when the tooth does not admit of being stopped at the second interview, I protect the fresh dressing with mastic. The suppurating surface having been changed to a healthy one, I proceed to apply my bibulous layer, securing a strict adaptation in contact with the blanché pulp, when the operation is completed by filling temporarily with osteo, or lining the cavity with this material, and inserting a good amalgam filling; or if a gold plug be contemplated, it is wiser to fill with osteo, and defer the gold filling for a reasonable time.

Difficult situations may be met by freely filing away the tooth; and I am bound to contend from experience—without wishing to lay down a hard and fast rule, each case presenting its peculiar features—that the above treatment, with certain modifications, meets all cases of exposed dental pulp, be they healthy, irritated, inflamed, or suppurating, when this organ has not become irreparably gangrenous or dwindled to dimensions of dead matter only to be met by extirpation and fang-filling; and I think this treatment, carefully carried out, commends itself for:—

1. Simplicity and painlessness.

2. Time saving.
3. A general absence of supervening symptoms.
4. Its wide applicability to all cases of exposed vital dental pulp ; and,
5. Its *rationale*, taking the peculiar *habitat* of the pulp into consideration, is sufficiently analogous to the surgical treatment of other lesions of the body.

I am persuaded that topical treatment stands first in the way of removing local irritants, and that we have a right to count much upon the recuperative power of the pulp, that *vis medicatrix nature* which befriends us in the treatment of other lesions of the body, from cuts, splinters under the skin, burns, &c. The peculiar diathesis of the patient may favour or retard the progress of healing, and in so far the local treatment may be seconded by judicious antiphlogistic remedies, aperients, and astringent lotions. Constitutional depression of vital power or exhaustion after illnesses simply point to the necessity for temporary local expedients ; but the principle of the local treatment advocated must not be departed from.

I desire to give emphasis to one feature in the treatment, and that is, whatever the state of an exposed pulp, short of gangrene, *cut down to it*, or level the adjacent dentine with the pulp's surface. I am convinced we cannot treat it effectually so long as a space exists between the pulp and the aperture leading to it. A fact which has more than once been impressed upon my mind through a carbolic acid dressing failing to blanch the pulp ; showing that the caustic had not touched it, as the inevitable result of contact is a white film or eschar. It is at this point that most operators stop short in their conservative treatment of diseased pulps. Mr. Woodhouse says in his paper already referred to, "When he ascertains that the pulp appears shrunk into the cavity, he at once decides to destroy it, as he considers it a sure sign that its vitality has been lowered, and that it would therefore perish under conservative treatment." A deduction which I believe to be erroneous.

If the pulp be inflammatory, it may with advantage be made to bleed, so relieving the hyperæmic condition, after which gentle syringing with carbolised warm water will have a beneficial effect, and prepare it for a temporary dressing.

I think the happy results attending the above treatment tend to show that the local destruction of the odontoblast layer does not prevent ossification of the pulp ; but the greater our success the less our opportunity of gaining information as to the actual physical changes in the pulp so treated. Time will undoubtedly clear up the difficulty when such teeth, from remote causes, may come back to us.

When we are exceptionally baffled, and untoward symptoms succeed our efforts to save a pulp, we have an alternative in the operation of rhizodontripsy, and I, amongst others, set a high value on this expedient.

Fifteen years ago arsenious acid was looked upon in America as the most important article in the dental pharmacopœia, because it enabled the dentist to achieve far more in conservative dentistry than any other one thing. (The *Dental Cosmos* for April, 1862.) But this so-called "conservative dentistry" meant the preservation of a tooth minus the pulp—"the shell without the kernel." I trust the dental student of to-day is imbibing a truer perception of what should be paramount in preserving the teeth. I mean the conservation of the dental pulp.

Mr. COLEMAN explained, in reference to the plan he advocated, that he always cleared out the contents of the fang when he had an opportunity, but in cases where it was utterly impossible to clear out the contents of the fang, without destroying the fangs of the tooth, he employed arsenic. He had successfully employed arsenic for nearly five years, especially in the case of children with their first teeth, although he had seen mischief arise from its application in devitalising pulp. He thought that the application of arsenic was one of the best cures for periostitis that had ever been brought before their notice.

Mr. MOORE thought that the healing process in the tooth should be completed before the filling process was commenced, otherwise the tooth might be lost altogether.

Mr. C. S. TOMES, referring to a remark of Mr. Henry as to the use for which the pulp was designed, said it was not in the least known what the purpose of the pulp was in a finished tooth. The tooth would, perhaps, just do as well together, as was instanced in the case of some of the lower animals. In the present state of their knowledge, he thought that all their arguments as to devitalising the pulp should be confined to the danger resulting from it by the occurrence of alveolar abscess. He thought that Mr. Coleman had struck upon a chord well worthy of consideration in speaking of the extension of inflammation from the pulp as being something capable of causing periostitis over and above the liability to having the periostitis set up by putrefying matter, as the vascular and nervous supply of the periosteum was derived principally from the tooth pulp. There was always a difficulty in carrying the anti-septic applications down to the end of the fang of the tooth; and if some anti-septic could be found to diffuse itself readily throughout the pulp, so as to convert the nerve itself into something like leather, so as to be itself the filling, better results in the way of fang-filling would ensue.

Mr. WHITE said that, although at first he was opposed to the use of arsenious and carbolic acid, yet he had afterwards successfully employed in some cases a solution of glycerine and carbolic acid, capping the healthy exposed pulp with vulcanite rubber, and there was no return in such cases of anything like periostitis. In cases where the pulp was suppurating, however, he had employed a paste of arsenious acid with carbolic acid and glycerine with bene-

ficial effect. He agreed with Mr. Henry that it was better to save the pulp when it was possible to do so, but in cases where it was partly suppurating it was better to make a clean job of it. He thought that when they had such a manageable and successful agent, such as arsenious or carbolic acid, it should be adhered to.

Mr. SEWELL, referring to the difficulty mentioned by Mr. Tomes of dealing with the decomposed particles of pulp in the depth of the fangs, thought that the remedy was to be found in absolute alcohol, which, although not an escharotic, would in many cases render portions of the pulp incapable of decay. He had, since bringing the matter before the Society, constantly used absolute alcohol in fang-filling. He first removed as much of the pulp as possible, then applied the alcohol with filaments of wool, then filled the roots with liquid oxi-chloride of zinc, sometimes mixed with filaments of wool in order to carry it to a great depth. In that way a small part of the pulp might be successfully preserved, provided it was not to some extent decomposed. He thought that Mr. Henry was quite right in drawing an analogy between dental and general diseases; in fact, he could not do that too much. Mr. Henry had only recognised one pathological condition of suppurating pulp, whereas there were many conditions, which should not all be treated according to one method. There were also cases where the pulp was divided into four portions at the roots of the tooth, two or three being gangrenous and one living, and he asked how that could be treated except by destroying the remaining portion?

Mr. BARRETT stated that for the last four years he had frequently destroyed pulps with arsenious acid. After the arsenic had acted on the pulp for two days, he removed what remained of the devitalised pulp as thoroughly as he could, afterwards plugging the fangs and pulp cavity with cotton wool soaked in carbolic acid, mopping the interior of the fangs so that the liquid carbolic acid might penetrate into the extremity of the fangs. He did not remember a single case in which alveolar abscess had followed that treatment.

Mr. DENNANT said that for many years past his treatment of the pulp exactly coincided with that described in the paper. He should avail himself of Mr. Coleman's suggestion and use arsenic as an anti-septic. He had formerly used it in combination with morphia and creosote.

Mr. WEST said he had used arsenic for many years without satisfactory results, but after hearing of Mr. Henry's treatment he had adopted its use and found it very successful.

Mr. THOS. A. ROGERS always endeavoured to save the pulp unless suppuration and some amount of loss of substance had occurred. Mr. Henry's idea of the *temporary* coagulation of the surface of the pulp after the use of carbolic acid was new to him. He often wondered what happened under a filling after the employment of real agents, as nitric and carbolic acid. He gathered from the paper read by Mr. Coleman that the pulp remained unchanged after the nitric acid treatment followed by filling; and having lately read several accounts of the carbolic acid treatment, where the plug was afterwards removed for the purpose of examining the state of the pulp, he found that that organ was unchanged and apparently healthy, but with no signs of calcification. Although it remained thus quiescent for a short time, he did not think these cases would ultimately be satisfactory, for which result it was necessary that calcification should be induced. Such powerful agents as the above were likely to prevent this by destroying the membrana eboris, after which he thought it unlikely that dentine would be formed. Mr. Tomes, indeed, mentioned a case in his book where calcification had taken place in the fangs of a tooth broken off in extraction; but, independently of the rarity of such cases, he believed that in this one the whole pulp had been left behind collapsed on the fangs when the crown was removed, and that, covered by coagulum and protected by the projecting gum, some kind of calcification had occurred. He suggested a series of systematic observations extending over several years, on some such principles as the following. The consideration of the peculiar nature of the dentine pulp, a modification of mucous tissue approximating to periosteum. The nature of the diseases to which similar tissues are liable, and their treatment. The treatment of the pulp hitherto adopted, and its results; and the application of these principles to its future treatment. He believed the Society contained many members well fitted for undertaking such an inquiry in a systematic and philosophical spirit.

Mr. BARRETT said that carbolic acid exercised an anti-septic effect, preventing decay.

Mr. STOCKEN said he had followed, with almost uniform success, Mr. Henry's method of treatment for two or three years. In cases of suppuration, however, the treatment extended over some few weeks before he could stop the tooth.

Mr. MERSON said that in cases where the pulp was accidentally exposed, he applied carbolic acid on blotting-paper and covered in with osteum, a portion of which was cut out at the end of a month and amalgam or gold fillings substituted. When the pulp was in a gangrenous state he applied arsenious acid and carbolic acid and extirpated the whole, filling the canals with gold. He had successfully adopted Mr. Underwood's plan, when the pulp was in a more congested state, of lancing freely, clearing the canal out, and pumping with creosote.

Mr. TURNER complained of a want of definiteness in the statements that were sometimes made with reference to the remedies applied. He had not used arsenic for many years, but latterly he had used it, and he found he was driven to extirpate the pulp more frequently than he used to do.

Mr. HENRY, in reply, said he thought his paper had laboured somewhat under a disadvantage from his appended cases not having been stated, as they would have been an answer to some of the objections raised. He did not agree with Mr. Barrett that coagulation of the pulp was obtained with carbolic acid; on the contrary, there was a vital action which resisted it. With regard to the treatment of suppurating pulp, he mentioned the case of a child he had under treatment, one of whose molars was extensively decayed. He cleaned the decay away carefully, exposed the pulp, dressed it with carbolic acid, and stopped with a mastic plug. A week afterwards he removed the plug and the pus underneath, and stopped the tooth with an osteo-plastic filling, and the child left in perfect comfort, and continued to be so. He also mentioned a case of treatment of polypus of the pulp in one of the teeth of a gentleman. The operation was performed about three years ago, and although the patient had, previous to that period, been unable to use the side of the mouth in which the tooth was, he stated that it was now one of the most useful teeth in his head. He would not pooh-pooh the use of arsenic in the case of a dead pulp, but he was only treating of living pulps in his paper. He thought that

a careful perusal of his paper, and the cases appended, would have the effect of changing the minds of those who were resolved to continue the use of arsenic. He was quite certain that the future would condemn the use of arsenic, and his success with the conservative treatment warranted him in giving up its use. He thanked the members for the reception his paper had met with.

The business concluded with the usual votes of thanks.

ORDINARY MONTHLY MEETING, MARCH 6TH, 1876.

C. VASEY, Esq., in the Chair.

The minutes of the previous meeting having been read and approved,

The balloting of members was about to be proceeded with in the way which had lately been adopted by the Society for convenience sake, namely, of balloting for a number of candidates simultaneously, when

Mr. UNDERWOOD said that, as it had been originally the custom of the Society to elect the candidates individually, he protested against the method proposed, and requested that the candidates be elected one by one.

The meeting having signified their approval of Mr. Underwood's proposal, the following gentlemen were balloted for in succession, and duly elected :—

Mr. Augustus Winterbottom, 16 Sloane-street ; Mr. Lewis B. Pillin, Conduit-street ; Mr. George William Payne, 34 Ebury-street ; Mr. G. W. Field, 39 Upper Brook-street, Grosvenor-square ; Mr. David Cormack, 77 Margaret-street, Cavendish-square ; Mr. George Hilditch Harding, Manchester ; and Mr. J. F. Corbett, 3 South Mall, Cork.

On the name of Mr. Frank Alexander Huet, 120 Oxford-street, Manchester, being announced for ballot,

Mr. C. J. Fox asked whether he was right in supposing that the ballot paper containing the name of the last-mentioned candidate went round as having passed the Council declaring that he was eligible for election according to the laws.

The PRESIDENT said he was afraid they could not enter into the question now, as it was a matter of management with the Council.

Mr. Fox said that, as the Council declined to answer the question, he must then take it for granted that the fact of

the candidate's name in question having been put in nomination before the Society indicated that the Council considered him eligible according to law. There might be individual differences of opinion, but, according to the usage of the Society, no gentleman had ever been proposed for the ballot unless he had passed the Council as eligible.

The PRESIDENT.—I am afraid we cannot allow this to go on; it is quite irregular. You are asking me a question with regard to the Council.

Mr. FOX.—Pardon me; the circumstances are irregular. I have been told by a large number of gentlemen here that they are prepared to vote for the right and proper thing; but they do not know what the right and proper thing is ("Chair").

The PRESIDENT.—Really I do not think I can allow you to go on.

Mr. FOX said that one gentleman had already been heard protesting against a certain course of action, he thought he had a right to claim a hearing.

The PRESIDENT said it was scarcely fair for Mr. Fox to refer to that. He did not wish any alteration. It was merely a matter of arrangement to save the time of the Society; it was not a matter of principle.

Mr. FOX said it appeared to him that a great deal of canvassing had been going on (cries of "Chair"), and a number of post-cards had been sent round and circulated amongst the members; and he thought they were all entitled to an explanation of the circumstances ("Chair"). If, however, the President ruled it, he must sit down ("Chair, chair").

The PRESIDENT could not admit that Mr. Fox was in order.

The ballot was then taken, and as a result Mr. F. A. Huet was declared to be not elected.

The PRESIDENT asked Mr. Fox if he questioned the result of the ballot.

Mr. FOX replied that he only wanted to know if it was one-third of the balls or one-third of those present.

The PRESIDENT.—One-third of those present; but there is no question of numbers here.

Mr. FOX expressed himself as satisfied with the decision.

Mr. Hugh Peterson, of Sydney, N.S.W., was then balloted for and declared duly elected.

Mr. SPENCE BATE, F.R.S., then read a paper "On the Necess-

sity for the Exclusion of Air as well as Saliva from large Gold Fillings, and the best Means of obtaining these Results," of which the following is an abridged report:—

The varieties of gold are numerous:—adhesive, non-adhesive, spongy, crystalline, cylindrical, thin foil, thick foil, thicker, and very much thicker. All and each are strongly recommended, and have, no doubt, their admirers. All, however, agree that there is one thing essential in the manipulation of gold, whether adhesive or non-adhesive, and that is, moisture of all kinds must be excluded from contact with the gold during the process of plugging. So essential appears this condition to be that I remember reading a skilful operator attributed his difficulty to compress a portion of spongy gold into a solid mass to the evaporation of moisture from a kettle of water boiling in the same room.

To overcome this difficulty all sorts of contrivances have been resorted to.

I have little doubt but that, equally with myself, many operators have been disappointed with the permanent duration of their work, after having conscientiously devoted their utmost skill, with the best appliances at their command.

The general explanation of this result universally is, that during the operation saliva has leaked into the cavity, and the gold become more or less prevented from being welded together by the surfaces of the several portions of foil having become moistened, and so prevented from being brought into immediate and close contact with each other.

To obviate this interference with the perfect completion of work, the greatest care is inculcated, not only to exclude saliva during the operation, but also to expel all moisture from the cavity previous to the commencement of the operation.

That saliva may be kept in abeyance in many cases with care, is possible, but certainly moisture never can.

We all know that a tooth when removed from the mouth does not become dry under many hours, and also that moisture from the breath will condensate on any surface colder than itself. Thus the passage of the gold pellet through the mouth collects a rime of moisture upon its surface sufficient to interfere with the perfectly dry contact of two surfaces of gold.

In spite of this, we find that a large number of gold plugs are inserted and consolidated with success. The question therefore arises, whether or not the presence of moisture is so fatal to the permanent solidity of gold filling as is generally believed, or whether the cause may not be due more immediately to other interference.

My own opinion has long been towards the latter hypothesis, and the presence of air entangled within the folds of the gold during the process of introducing the plug is, I feel, with confidence, the great cause that interferes with the perfection of large gold plugs.

Leaf-gold, in whatever form it may be rolled, must envelop between its folds a large quantity of air, which, being compressible, is forced down into the deeper recesses, where the cessation of pressure permits it to rest until the entire mass of stopping is raised to the temperature of the general system. The compressed air by this means becomes more rarefied, and acts as a pressure from within, escapes through such crevices

as may exist. The consequent result is, that the saliva from the mouth that laves the tooth persistently, by capillary attraction, is drawn into the passages by which the compressed air escaped, carrying with it in solution the salts and mucus of the mouth. Thus it is, that it appears to me, the plug that once appeared to have been solid and well condensed, becomes soft and penetrated throughout with salivary deposits. Not only do I contend that the presence of compressed air is a source of detriment to successful gold plugs, but that it is an immediate, if not constant, source of periodontal irritation and alveolar abscess.

Feeling certain that the presence of air is one of the more immediate disturbing causes interfering with the perfect consolidation of a gold plug, and its permanent retention within the cavity of a tooth, it becomes necessary that we should ascertain the means by which it may be excluded.

If we take a sheet of gold foil and lay it smoothly on the surface of a plate of glass, the greatest difficulty will be experienced in placing it and retaining it in immediate contact with the entire surface; but if the same be inserted under water from which the air has been expelled by boiling, the sheet of foil will be found to be capable of being brought into immediate contact throughout its entire surface.

If this be true with regard to a sheet of gold on a surface of glass, it will be found to be still more so in relation to two sheets of foil. This contact is due to the fact that the water takes the place of air between the two surfaces, and, unlike the latter, the water is not compressible, and therefore is capable of being forced out from between them.

This appears to raise the question whether moisture, free from extraneous matter, is in itself detrimental to the perfect adhesion of two surfaces of pure metal, of the same character and condition.

My own experience tells me that the presence of water that is free from air, and any substance in solution, cannot have any deleterious influence in preventing the perfect cohesion of clean surfaces.

In order to give force to this opinion, I have filled with gold taken out of water several large cavities in certain teeth, which I think will clearly demonstrate that, whatever shortcomings there may be in the perfection of form attributable to manipulation, the gold is capable of being as closely compacted under moisture as it is without it.

This tooth I put into clean freshly-boiled cold water, where it remained until the dentine was saturated with moisture. I then carefully plugged the cavity with some of Ash's No. 1 gold, which I prepared in a manner that I shall describe, and placed it in water, taking it out streaming wet, and forcing it into the cavity until I could not press in any more. The gold was all inserted with hand-pressure, without being placed in a vice, and malleted at the surface only. I then polished it, put it aside for a day or two, and then threw it into an inkstand filled with writing-ink, where it remained for some days, when it was taken out and again allowed to dry; after which I split the tooth into two pieces, took out the gold filling, and found that not the slightest amount of discoloration from the ink had penetrated either between the walls of the cavity and the gold, or into the substance of the filling. The gold was then annealed and beaten into plate, a circumstance, I contend, that could not have occurred if the presence of moisture between the folds of the foil had in any way been detrimental to the perfect cohesion of the several surfaces brought

into contact ; a fact, moreover, that would have been utterly impossible if the ink had penetrated into the plug.

The next experiment is one of a different kind, and originated in the supposition that it was very probable that more or less air was very likely to get entangled within the folds of the foil during the necessary exposure of the gold after it was taken from the water, before its being compressed into the cavity of the tooth.

I therefore thought, if I submerged the gold in glycerine, that I should be able to work with a fluid that would exclude the air, if it would admit of the gold by compress into a permanently solid mass.

Believing as I do the importance of glycerine as a remedial agent, I was very desirous of ascertaining the extent to which gold would combine when submerged in glycerine. I therefore plugged two teeth, molars, with large lateral cavities, with gold that was submerged in glycerine. I scarcely think that the finish is as compact as those that have been steeped in water only, but the defects appear to me rather to be those of manipulation than of any deficiency arising from the power of a solid and hard gold plug being interfered with by the action of glycerine ; and the power of solidity being given to such plug depends, in my opinion, on the extent to which the air has been excluded from the plug, and not upon the presence of moisture or glycerine.

I have throughout confined the term moisture to mean water, or aqueous vapour, free from any foreign admixture, and therefore cannot include saliva, which contains salts in solution and much viscid substance that cannot but be prejudicial to the work under any circumstances.

The manner in which I have generally prepared the gold for this process is by cutting the book up into various sizes, and folding the several pieces into loosely compressed balls, touching them as little as possible with my fingers. Some, also, I roll and compress into long plates ; all of these I place into perfectly clean water. They will be found to float upon or immediately below the surface, and will so continue until the water be boiled for a short time, when, the air being expelled, the pleggets of gold sink to the bottom.

The gold so treated works more plastic than it previously did ; and I contend, with less amount of labour, it is capable of being wrought into a perfectly impervious stopping.

It is now five-and-twenty years since I made my first experiment, and I was induced to try it from the circumstance of having to replug a tooth that had been stopped by one of our best operators.

The plug, while it appeared to be entire and perfect at surface, I found on pressure not to more than half fill the cavity which it was intended to stop. This circumstance I attributed to the presence of a quantity of air being entangled in the gold, and this allowed a space to exist in the body of the plug that the operator never supposed to be present. I have experimented in the same direction occasionally since then, and it was only after watching a plug of nearly half the size of an upper molar tooth, for nine years in an interstitial cavity, that I attained confidence to have an opinion at variance with those that are generally accepted.

I have now inserted some hundred of such plugs in the month, and my own experience has not enabled me to have to condemn but one or two of them.

Mr. UNDERWOOD said that in his own experience he had never yet found, as Mr. Bate seemed to have found, that moisture might be admitted with adhesive gold; but that with adhesive gold moisture interfered entirely with its properties, and that very few years would be sufficient to show that the operation of plugging under such conditions would be defective. For a long time the plan adopted in the hospital was to combine the two; to commence to plug with non-adhesive gold, and to make the greatest portion of the plug with it, and then to work up and fill with adhesive gold; but, under such circumstances, it was found imperatively necessary, not only to exclude the moisture of the saliva from actual contact with the plug, but also to prevent the moisture of the breath coming in contact with it, and for that purpose the rubber dam was invaluable. While expressing his thanks to Mr. Bate for his valuable contribution, he wished to know if he courted the presence of moisture with adhesive as well as with non-adhesive gold.

Mr. SEWELL wished to ask Mr. Bate whether the view expressed by Mr. Makins, that the cohesion of gold was a process of welding exactly analogous to the welding of partly molten iron or other metals. Some metals, such as platinum, tin, and lead, would weld in a cold state, and if the union of gold was of such a character, it appeared to him that, theoretically, the pressure of moisture must be against the union. Whatever recent experiments had proved to the contrary, he had never yet succeeded in obtaining cohesion of adhesive foil which had become moist. The difficulty of making a perfectly water-tight filling with adhesive foil was extreme, unless the gold was packed with the greatest care and in minute portions. Manipulating the gold by the ordinary methods, it was impossible to obtain cohesion of adhesive gold in the presence of moisture.

The PRESIDENT said he had always thought that too much stress was laid upon the necessity of keeping even the breath from adhesive stoppings. He had seen a great many large stoppings, after a time, fail at one corner, which he considered was due to a drawing together of the adhesive foil, it being consolidated in the centre. He had always tried to work from fixed points, fixing every piece of the adhesive stopping as he went along.

Mr. TURNER pointed out that Mr. Ashley Burrett, who lately read a paper before the Society, was confirmed in his

view by Mr. Bate, that the gas which was driven through the apex of the foramen of the tooth canal was the cause of periodontitis and alveolar abscess. Mr. Bate had almost taken their breath away by the clear manner in which he had treated of the subject, and by the demonstrations he had given of what he was able to do. He (Mr. Turner) could not believe that the admission of moisture to cohesive gold stoppings was a matter of small importance. He had never yet been able to carry through what he called a good cohesive gold stopping if moisture reached the gold, without beginning that part of the stopping anew, that is to say, clearing away the gold that was moist and treating the surface with absolute alcohol or chloroform, in order to get it quite dry. Mr. Bate had expressly stated that he did not succeed so well with spongy gold, which was the very highest kind of adhesive gold, as he did with the non-adhesive gold when treated on his principle. That went some way to show that the admission of moisture to adhesive gold was inimical to a good stopping. The moisture admitted in a general way was either breath or the saliva, and, as Mr. Bate had pointed out, the saliva was a very different thing from the pure water from which air had been expelled by boiling, which Mr. Bate used in producing the change in the non-adhesive gold.

Mr. COLEMAN said he was not very much surprised at the part of the paper which stated that water-tight fillings could be made with non-adhesive gold in the presence of moisture, because he believed that many of the fillings by the old practitioners were really made without regard to the presence of fluids of the mouth. When it was possible, the amalgams were washed before applying them, and thus the moisture was squeezed out; but sometimes the moisture was squeezed out by the instrument, and it was possible that the air would also be squeezed out. He rather thought that Mr. Bate had laid too much stress on the presence of air, because, if the plug were perfectly solid throughout, a small portion of air contained in it would not be exposed to a very considerable amount of pressure. The plug would be more or less warmed in the process of putting it in. The difference between the operation of putting it in and when it had settled in the tooth would be between 25° and 30° Fahr. of an increase; and that would not be sufficient to expand the air to any considerable extent so as to force it

out. They would only be too glad if the conclusions arrived at by Mr. Bate were correct, because in many instances it would be a great relief to know how to manipulate gold by what must be called the wet method. It had always appeared to him that the *sine quâ non* in manipulating adhesive gold fillings was that moisture should not be present, and that even the moisture of the breath would to a considerable extent interfere with the manipulation.

Mr. HUTCHINSON asked Mr. Bate how he applied practically in the mouth the principles which he had enunciated with regard to the treatment of teeth out of the mouth; how he secured the presence of such a fluid as perfectly pure water, whether he applied the rubber dam and drowned the tooth with boiled water, or whether he did not use the rubber dam and put the gold into the cavity filled with saliva; also, whether he did not consider that a tooth which had been stopped with gold that had been soaked in water, when exposed to the ink test, should not take up ink, seeing that already the gold was surrounded by a moist atmosphere.

Mr. WALKER said that Mr. Bate had taken him by surprise when he said that he could plug with adhesive gold with water. He could not see how water could be introduced into the mouth without its being mixed with saliva. He would be glad to hear how Mr. Bate overcame the presence of saliva with water, because, so far as his own experience went, one atom of saliva would thoroughly interfere with the union or cohesion of one atom of gold with another. He should like, if Mr. Bate could teach him, to introduce adhesive gold without the breath affecting it.

Mr. SPENCE BATE, in reply, said he did not ask those present to take what he said for granted, but to experiment on their own behalf, and allow their experiments the test of time. In reply to a remark by Mr. Underwood, he said that it seemed rather puzzling if water made adhesive gold break up in two or three years that it should allow it to unite at all. His theory was that in adhesive gold was mixed a certain amount of air which caused a continual pressure from within. In reply to Mr. Coleman, he thought that 25° of increase of temperature was a very small amount in itself, but from his own experience he had found that it was sufficient, if kept on persistently for weeks, to break up even stoppings in which he had thorough confidence.

This, he thought, usually resulted from air being introduced into the stoppings. In reply to the remarks of Mr. Sewell, as to the welding of gold, he would merely say that his (Mr. Bate's) experiments had been chiefly with non-adhesive gold, but he had used adhesive gold with it when he wanted to build up a surface. He had frequently found that by using serrated points, and plugging carefully, he could build up the same as with adhesive gold, but it must be done with care. His experience, however, had not been so much with adhesive gold, simply because his method enabled him to work non-adhesive gold in the way usually adopted for adhesive gold. Mr. Turner spoke with regard to gas passing down through the alveolus. What had been stated in the paper with regard to that was merely an episode to show why he used glycerine. Some years ago he had been presented with some crustaceous animals from Cape Horn, one of which, a crab, was made beautifully flexible by the gentleman who presented it to him, by his placing it in glycerine for a day or two. He (Mr. Bate) had followed this example, and had by the application of glycerine toughened the tissues of such animals and rendered them flexible. He was led by these experiments to apply glycerine to the teeth, and found that it had the effect of rendering the pulp perfectly solid and firm without being destroyed. He mentioned some cases in which matter was exuding from the cavity of the tooth. He first touched the affected part with carbolic acid, and then applied the glycerine once or twice with a cleansing and, subsequently, a healing effect. In some of these cases the plug was first removed; but whenever he had had occasion to remove plugs they had not been welded specimens. He questioned whether the amount of welding took place which was sometimes supposed. With the exception of the spongy gold to which he had referred, his researches had been confined to non-adhesive gold, and he admitted that with spongy gold he could not build beyond the surface. Mr. Hutchinson was mistaken in one point when he spoke of the inky test. After it was taken out and filled with the wet filling it was put aside for two or three days until it was perfectly dry, and, therefore, capillary attraction was more open had there been any water to escape. It was in the ink-stand several days; then it was taken out, and again allowed to dry, and the same gold was beaten into a plate. If the ink had pene-

trated into the gold it could not have been beaten into a plate, and consequently it must, he thought, have been impervious to moisture. In reply to a gentleman who asked how he put the filling in, he said that his rule was to work it the same in every way. His object was to get, as much as possible, the saliva out of the mouth. He did not generally use the rubber dam, because he found that, as a rule, patients would not submit to its use. It must be remembered that the viscid portion of saliva would not mix with water. The only portion that would mix was the watery portion, and that carried the salts, but the presence of water would make it more dilute and more capable of being pressed out than otherwise. If a dozen sheets of gold were taken and laid between two pieces of wood or cloth and pressed, the cohesion would be found to be very great indeed, probably because the surfaces were brought into contact without any air between them. He had extracted an interstitial stopping from a lady's mouth on account of its getting loose, after having been in for nine years, and there was in the mouth of Mr. Scott, dentist, of Swansea, a tooth which he had filled twenty-five years ago. Both these were fillings according to the wet process, and were not so liable to kicking or rolling about in the tooth as in the dry process. He mentioned two cases of teeth which had been drawn after having been stuffed for a great number of years, and it was found that the decay had never been taken out previous to stuffing, and had not increased during the whole of the time it was worn by the patient. He could only account for that by the circumstance that the cavity must have been full of saliva, and that the plug must have been clapped in when there was no air there. He contended that the presence of air tended to the decomposition of the tissues much more than the moisture did.

After the usual vote of thanks the meeting separated.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—I have received your paper on "The Functions of the Odontological Society," and am very glad to see there is some hope of

a movement in the right direction, viz., of obtaining some really representative body, whose object it shall be to watch the interests of the Dental body at large. There is little doubt that if any legislative action is contemplated, it must be in conjunction with the whole body of existing so-called Dentists, whatever may be their qualifications, and I feel convinced that this alone, namely, registration, will eventually produce a really professional body, such as the public mind and the profession ought to attain to.

I shall listen with interest to any discussion which may arise at the next annual meeting, and give my little support to any broad measure that may be started.

I am, yours truly,

February 23rd, 1876.

E. M.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—“The Council of the Royal College of Surgeons, on the recommendation of the Board of Dental Examiners, have resolved that the preliminary examination in Arts shall be compulsory for all candidates for the Dental diploma who commence their professional education on or after October 1st, 1877.”

This announcement will be received with satisfaction by every intelligent member of our profession.

At last a decided step in the right direction has been taken that will prove an unmixed good, which is more than can be said for “registration,” for which we have lately heard so much clamour.

March 9th, 1876.

L.D.S., R.C.S., Eng.

TO THE EDITOR OF "THE MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—It is quite refreshing to see in type the words “College of Dentists:” the fact that after a lapse of about twenty years since a goodly number assembled together with the honest purpose of elevating the dental profession as a body, the same step should *now* be thought desirable by many eminent men in the medical as well as in the dental profession, must be a source of pleasure to the pioneers in question, and an encouragement for the entire profession to support the present movement. “Knowledge is power linked with the universe, but ignorance is everywhere a stranger, ill at ease and out of place;” this sentiment was expressed by one of the first supporters of the old College movement, and I think when I hear of recently fledged M.R.C.S.’s dictating, from their small meetings, terms of such narrow import to the profession at large, I feel that it is high time for men imbued with more than the one idea of self-exaltation to come again to the front to support a movement for the re-establishment of what might by this time have enjoyed the happy appellation of “The Royal College of Dentists of England,” which doubtless would have given universal satisfaction.

It must be remembered that the excellent staff of lecturers attached to the Metropolitan School of Dental Science and the course of study mapped out for the students afforded the foundation for a sound theoretical and practical knowledge of dental science prior to the students presenting themselves for examination.

I am, dear Sir, yours faithfully,

ONWARD.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—Your excellent article in last month's Review upon the functions of the Odontological Society receives my hearty approval. With all due deference to the opinions freely expressed by an allied journal, I fail to discern the exclusively scientific character of the society in question. Assuming the original intention of the founders to have made it purely scientific, that intention was neutralised by the political act of establishing the Dental Licence as an appendage to a political body, the College of Surgeons; and still more so when the amalgamation with the College of Dentists took place. It cannot be denied that the College was an essentially political institution, and that its vital elements remained is proved by the many indefatigable workers who are endeavouring to restore its principles. Being at the time a very young member of the Odontological Society, I do not know whether the union made any alteration in the code of laws, but I do remember that the title was altered from London to Great Britain, thus giving the society a wider range and less exclusiveness. If an amalgamation produces the slightest alteration it proves the infusion of new or resuscitated ideas, and the body corporate must partake of the elements of both; so allowing the Odontological was scientific, the College was political, therefore a pure union ought to combine the two. Had the College been defunct, and individually sought admission to the sister society, its elements must have succumbed to the process of absorption; but being a bodily union, is it not, to say the least, ungracious to declare ourselves adverse to their opinions, and refuse to carry on the work they have inaugurated?

A still more powerful reason why the Odontological Society should assume a political aspect is the probable formation of another society, which must of necessity prove antagonistic. The leaders of this new attempt who glory in the M.R.C.S., we presume, will possess in addition such a much higher order of intelligence than ourselves, that we presume all the science and glory will depart from us, and "Ichabod will be written on the walls" at Leicester-square. We who are less honoured envy them their attainments, and grieve that we were born too late to reach their exalted position by the same "Royal Road," but would fain hope that ere they commit themselves to another effort they will pause, and contemplate the professionally suicidal effect of their new and pet idea. One of the number disclaims any attempt against existing associations. Have they considered that the whole force of their effort is hurled against the "child" of the society they appear to befriend, and in whose ranks they remain? Let them act consistently and withdraw allegiance from one or the other: the two must stand diametrically opposed, and our safety lies in forming a new arena for future action. We must become political and scientific and defend to the utmost such unwarrantable attacks upon the "Dental Diploma"; it is the child of the Odontological Society; it arose and grew from the combination of zeal and intellect that Society brought together; shall it now forget its parental duty and quietly acquiesce in its offspring's degradation or extinction?

Future generations will fail to see the advantage of mental toil when advertising is all that is necessary to obtain a lucrative profession and social equality with the Licentiates. I am no alarmist, Sir, but cannot refrain from giving a warning when danger is so plainly visible, and

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THE

"SPÉCIALITÉ" SHERRY.

"Free from ACIDITY and HEAT."—BRITISH MEDICAL JOURNAL.

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THE MONTHLY REVIEW OR DENTAL SURGERY.

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The Functions of the Odontological Society.

It is a satisfactory evidence of the growing importance of the Odontological Society that, like the corporate bodies generally, it is becoming very slow to adopt any radical measure of reform. It further shows a remarkable likeness to such institutions in regard to the zeal that it is exercising in the accumulation of money.

Year by year the treasurer has reported with the most manifest satisfaction, the steadily augmenting amount of the Society's funded property and "cash on deposit."

It is but natural that a treasurer, with a properly balanced mind, should possess a wholesome pride in being thus able to demonstrate the care with which he has administered the financial affairs of the Society, and, from his point of observation, a large and increasing balance is doubtless the *summum bonum* of his official ambition.

It is, however, a question that admits of a good deal of argument, whether it is the function of a scientific society to devote its energies to the accumulation of money. We must confess that we fail to discover anything in the Rules or Constitution of the Odontological Society to justify such a course of action.

The Society, so far as we can judge from the last "Report

of the Treasurer," has now nearly one thousand pounds as a reserve fund.

What is being done with the interest of this money? We believe it is simply accumulating, and being added to the principal already in hand. The Society is larger than it ever was before, its current income is sufficient to cover its current expenditure, and admitting for the time the desirability of having a thousand pounds always in reserve, there seems no reason why the interest on such a sum of money should not be put to a more useful purpose than the increase of the funded property of the Society.

If the records of the last six months prove anything, they show that, above all things, the Dental Profession expects the Odontological Society not only to take, but to maintain, its position as the chief representative body of the Dental Surgeons in the United Kingdom. Supported by men who represent every shade of political feeling, decided in its policy of maintaining the honour of the Dental Diploma in its integrity, it is further pledged to promote and reward by every means in its power the scientific work of the members of the Profession. For such a purpose, the interest accruing from the funded property of the Society is clearly available; and to such a use it should certainly be applied. It will, doubtless, be urged that a time may come when the number of members will be reduced to such an extent that it can only exist by the aid of its reserve fund. If ever such a day arrive, it will be better that the Society should pass away rather than be supported by such fictitious aid. So long as the purpose for which it was founded is carried out, we have no fear of its members being reduced or its financial capacities impaired; but as soon as its usefulness ceases, it will be well that its very existence should come to an end also.

The Month.

ON Wednesday, the 23rd of March, W. H. Williamson, M.B., C.M., Aberdeen University, and D.D.S., Philadelphia, was appointed Dental Surgeon to the Aberdeen Infirmary.

WE regret, says the *Macclesfield Courier*, that through a printer's error in the typographical arrangement of the paper of the 29th January, a paragraph concerning Mr. Frank Huet, of 120 Oxford-street, Manchester, was improperly appended to an advertisement. As we are informed this has been made use of with a view to injure that gentleman's status, we express our regret for the error, and assure Mr. Huet and his friends that the appearance of the paragraph and the advertisement in juxtaposition was purely the result of an unintentional oversight.

A LARGE MOUTH.

The *Medical and Surgical Journal* says that Dr. Robinson, of Rome, N.Y., took the impression of the jaw of a coloured woman, which measured three inches from front to back, and three inches across, the usual dimensions being only one and a half by two inches. This is said to be the largest mouth known to the dental profession of this country.

THE NEW TOWER IN LEICESTER-SQUARE.

We hear that the handsome red brick tower, now being built adjoining the London Dental Hospital, is the property of Mr. Edwin Saunders. Is it true that this gentleman, who has already done so much for the dental profession by his munificent aid to the hospital in Leicester-square, proposes to enhance the obligation by presenting the handsome tower, when completed, to the trustees of the London Dental Hospital? We trust that what rumour says is correct.

THE ANNUAL DENTAL DINNER.

The Annual Dental Dinner at St. James's Hall was hardly an unqualified success. Places of honour were reserved for gentlemen who declined to occupy them, because they had not previously been asked to take any official part in the dinner. Some of those who attended complained that they did not get properly served, whilst others seemed to have been most fortunate in the attention they had received. No one was to blame, and the secretaries certainly did all in their power to make everybody happy. The moral of the whole thing is, that in future the arrangements should be made "rather never than late."

DEATH OF MR. CAMPBELL DE MORGAN, F.R.S.

We deeply regret to have to announce the death, after a few days' illness, of Mr. Campbell de Morgan. The dental profession by this gentleman's decease suffers a serious loss. He was from the first associated with the London Dental Hospital, and at the time of his death was chairman of the Committee of Management. A man of sterling integrity and remarkable clearness of judgment, he maintained with unwavering success the influential position which he occupied in connection with the London Dental Hospital. Apart from those social qualities and business capabilities which made him so valuable to his colleagues, he will long be remembered in the world of science by his contributions to dental physiology.

DEATH FROM CHLOROFORM.

An inquest was held at Liverpool on the 28th ult. respecting the death of a lady, which occurred while she was under the influence of chloroform. Mr. E. A. Morgan said he was a duly-qualified surgeon, practising dentistry. The deceased, accompanied by a young lady, came to him on the 25th, and told him she wished some stumps removed to prepare her mouth for a set of artificial teeth, and expressed a desire to have chloroform administered. He examined her pulse and heart, and, thinking her a fit subject, gave her chloroform slowly. While she was unconscious he removed two teeth and three stumps, at the same time keeping her face and breathing in view. Seeing a sudden change come over her, he opened the window, and then threw cold water in her face. Her breathing became slower, and he placed her on the floor, and she then ceased to breathe. He resorted to Marshall Hall's system of artificial respiration, which, however, did not answer; he then tried Sylvester's method, and she breathed freely for about two minutes. Meanwhile, he had sent for assistance. The breathing of the deceased suddenly ceased altogether. Dr. Banks, who shortly arrived, attempted to restore life by means of the galvanic current, but in vain. Dr. Caton, lecturer at the Liverpool School of Medicine, who with Dr. Banks made a post-mortem examination of the body, said the cause of death, in all probability, was arrest of the heart's action, attributable partly to the weakened condition of the heart from disease, chloroform being the exciting cause. The jury gave a verdict to the effect that death arose from misadventure—from the administration of chloroform for a dental operation, and they absolved Mr. Morgan from all blame.

On the Microscopical Structure of Fossil Teeth from the Northumberland True Coal Measures.

By W. J. BARKAS, M.R.C.S.E., L.R.C.P. Lond.

CHAPTER XXI.

(Continued from page 439.)

Genus.—*Strepsodus* (Huxley).

Concerning this fish our knowledge is very slight indeed ; we are only acquainted with detached teeth, fragments of jaws, scales, and vertebræ ; but although we have learnt so little, its place in the classification of fossil fishes cannot well be disputed when we compare its scales with those of *Rhizodopsis*. Again, with regard to the arrangement of the teeth in the jaw, there is a great similarity between these two genera. A brief *resumé* of the characters that we are acquainted with at the present time will best establish its close alliance to *Rhizodopsis* ; the mandible and premaxilla are furnished with two rows of teeth, one internal to the other, the internal teeth being larger than the external ; the scales are large, cycloid, and marked near the centre by a raised boss ; the scales and dentary bones are sculptured ; the vertebræ are completely ossified, and present the form of narrow rings. As our researches are carried on it is to be hoped that we will be enabled to obtain some knowledge of the other characters of this fish ; as it is, we have made some advance since Professor Huxley founded the genus, because at that time only detached teeth had been discovered.

The direct literature on this genus is very small ; Dr. Young, of Glasgow, refers to it in the "Quarterly Journal of the Geological Society, London," Volume XXII., and accompanies his remarks by an illustration of a tooth ; Mr. T. P. Barkas gives a slight sketch of all the parts that have been discovered, and gives lithographs of them in his "Coal Measure Palæontology." Indirectly, Mr. Attley and Professor Owen have remarked upon the genus ; the former, in a paper published in the "Transactions of the Tyneside Naturalists' Field Club," Volume VI., describes figures and an imperfect jaw, under the cognomen of *Holoptychius sauroides* ; the latter details the external and microscopical characters of the teeth, and gives excellent chromo-lithographs of them in his "Dental Characters of Carboniferous

Fishes," but he supposed them to pertain to a new genus, which he designated accordingly *Aganodus undatus*: the fact that these teeth were not new to science but belonged to *Strepsodus* was first pointed out by Messrs. Hancock and Atthey in the third volume of the "Transactions of the Northumberland and Durham Natural History Society." Only one species has been named, viz., *Strepsodus sauroides*; it is found solely in the True Coal Measures, and, like *Rhizodus*, it certainly appears to oppose Darwin's theory of the "survival of the fittest." It is a very curious fact that *Rhizodus*, *Strepsodus*, *Orthognathus*, and *Archichthys*, all huge and powerful scaled fishes, more formidable than any other carboniferous fishes, only existed during the period of one Coal Measure formation, *Rhizodus* belonging to the Limestone strata, and the others to the True Coal Measures, while little defenceless fishes like *Palæoniscus*, *Platysomus*, &c., lived on until the end of the Permian era.

The jaws are very rarely discovered, and when they are obtained they are always fragmentary, at least, I am not aware of any having been found perfect; Mr. Ward, of Longton, is said to possess a jaw that is nearly so, and Mr. T. P. Barkas has an almost complete one in his cabinet, and from it I have taken my illustration. The dentary remains that I have examined all belong either to the mandible or the premaxilla, and from them we can clearly observe the distinguishing characters.

The premaxilla has never been obtained so nearly complete as the mandible, but still sufficiently so to enable us to recognise the mode of its dentition and the ornamentation of its external surface. The teeth are of two sizes; the smaller serial teeth are situated near the edge of the external border of the sulcus that runs along the alveolar margins; they are arranged on the same plane, and are placed at regular intervals from each other; there is only one laniary tooth which is situated internally to the serial teeth, and near the anterior articular extremity it arises from the bottom of the alveolar groove. The external surface is covered with well-marked tubercles, which are arranged in a very irregular manner.

The mandible (fig. lxxxvi.) is a long, narrow bone, being nearly as deep posteriorly as it is anteriorly. The symphyseal extremity in the specimen I have figured is gently curved downwards and backwards towards the inferior border;

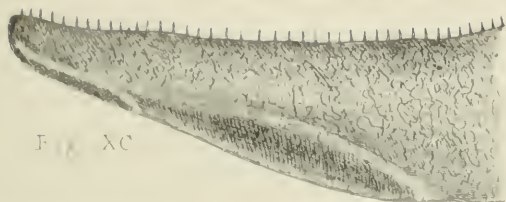


Fig. XC

Anterior end
of Mandible

not Size

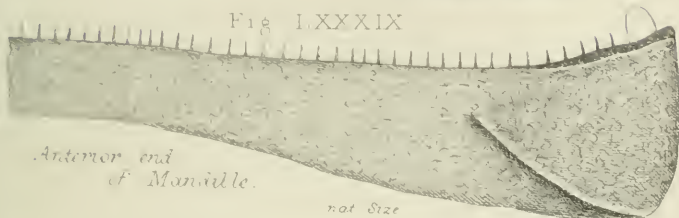


Fig. LXXXIX

Anterior end
of Mandible.

not Size

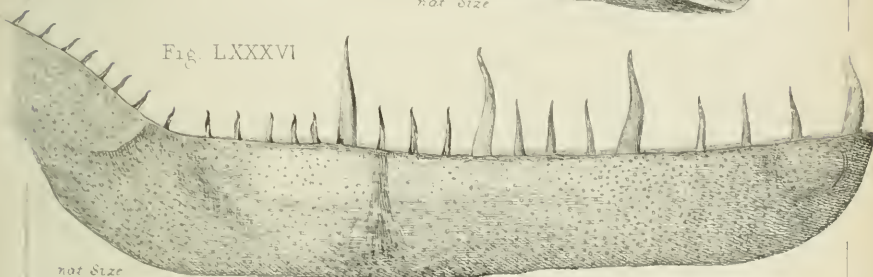


Fig. LXXXVI

not Size

Mandible

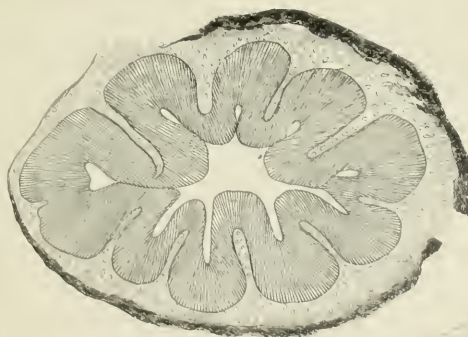
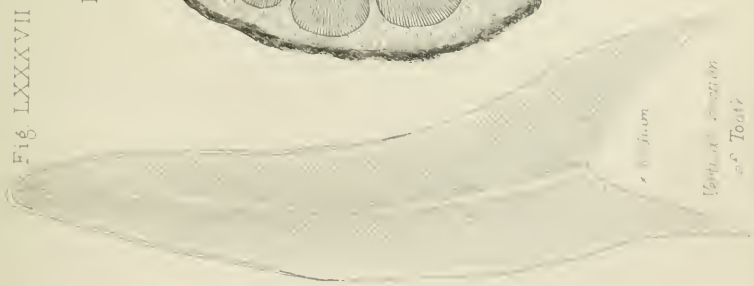


Fig. LXXXVIII

Transverse Section
of base.

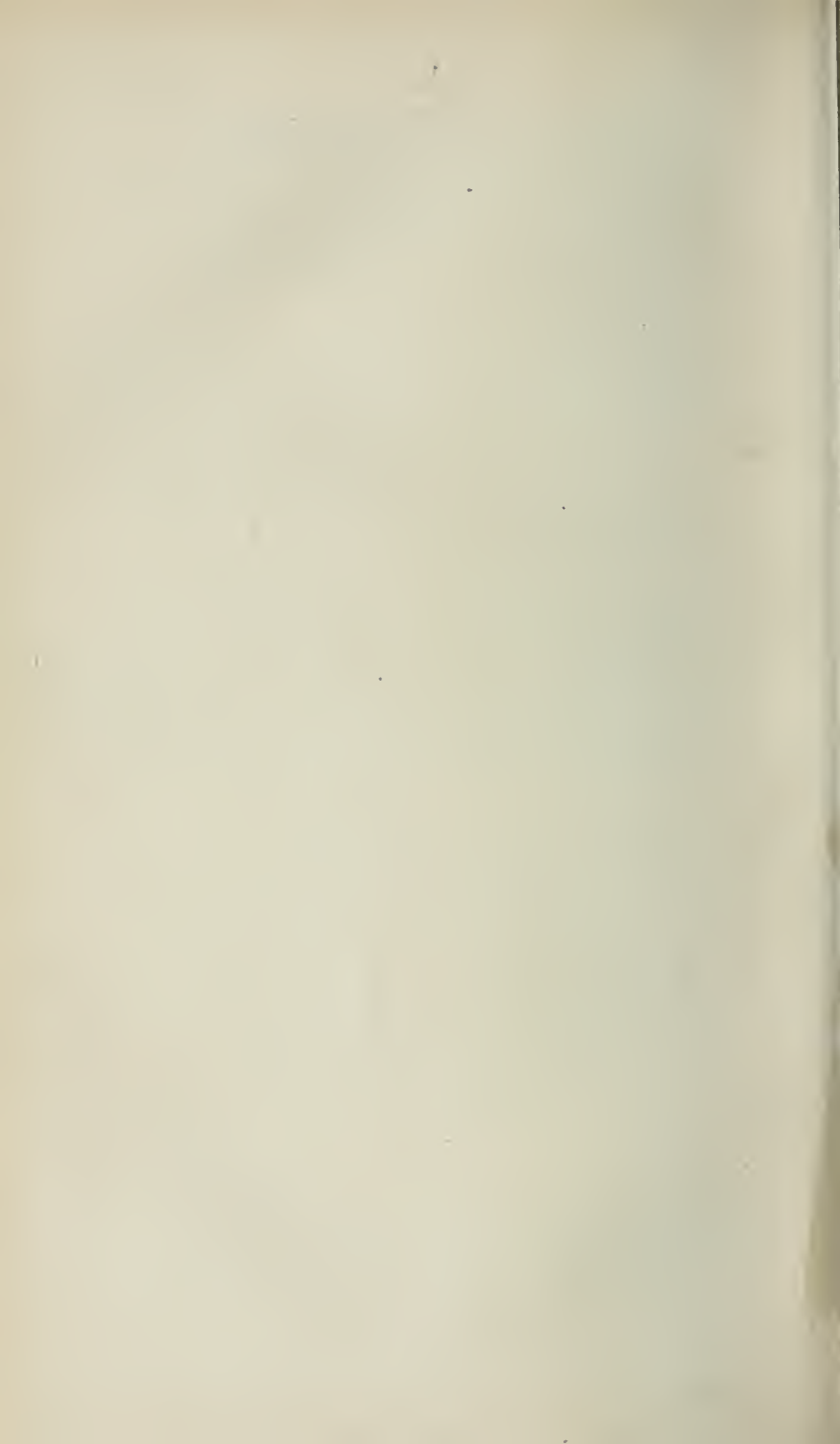
Mag. 10 dia

Fig. LXXXVII



not Size

Vertical Section
of Tooth



it is also thicker there than at any other part of the bone. The form of the posterior articulation I have not seen. The inferior border is nearly straight, and runs parallel with the alveolar margin; in the drawing the posterior end of the bone is bent upwards; this is evidently not a natural twist, but is the result of a disturbance during the process of fossilisation. The superior margin is deeply grooved along its whole length, the external wall being much higher than the internal; from the inner surface of this external wall, and a little below the edge, arise a continuous row of small teeth like those in the premaxilla, but they are not as uniform in height, the mandibular teeth decreasing in size as they proceed backwards; from the bottom of the groove spring the laniary teeth, the number of which varies in different mandibles; in fig. lxxxvi. there are four, but it is probable that there are one or two missing from the posterior distorted end; they are arranged at very regular intervals, with from three to five teeth between them, according to the size of the jaw. The external surface is ornamented like that aspect of the premaxilla, and does not differ much from the markings of the external surface of a jaw of *Acrolepis*.

The teeth have a form peculiar to themselves, and it was upon this unique character that Professor Huxley came to the conclusion that they belonged to a genus new to science; he accordingly designated it *Strepsodus*. These teeth present two sizes, the serial teeth being about half the height of the laniary teeth in the same jaw; in all other respects they possess similar features. They are slightly compressed laterally, and present from two to three gentle but marked curves between the base and the apex; they gradually taper towards the point, which is rather acute; the base is fluted; so far all the teeth agree, but we find differences in the external markings of the body; in some specimens the surface is smooth and glistening in front, and the sides are ornamented by fine but distinctly raised longitudinal striae, which proceed nearly, if not quite, to the apex; in the other examples, in addition to these characters, the inferior half of the body is more or less deeply grooved by a greater or less number of furrows. Concerning this difference of marking, Mr. T. P. Barkas says, "it is not impossible that further research may prove that two species of *Strepsodus* existed, one having rounded and the other deeply furrowed teeth."

I do not think, however, that there is any real difference between them, the grooving in the one being merely due to an earlier infolding of the dentine.

(*To be continued.*)

From Dr. Hollænder's Clinic.

General Alveolar Periostitis.

From the *Vierteljahrsschrift*.

W. P., 45 years old, became suddenly ill on the 3rd September, 1874. At this time severe pain in the whole of the mouth was present, and so much swelling in the upper lip and cheek that the nose and eyes were almost hidden. The pain was so severe in the teeth that P. could not close his mouth, and at the same time he felt unusually weak.

He was considered scorbutic, and the gums were lanced, whereupon the great swelling was somewhat lessened. Nevertheless, the remaining conditions, especially the pain in the teeth and the impossibility of using them in spite of repeated poultices, rinsing the mouth with tincture of myrrh, etc., remained the same, and the teeth in the upper jaw becoming more and more loose, in February, 1875, he applied for advice. The patient had a perfectly healthy and regular set of teeth, 32 in number, and not a trace of caries to be seen. In opposition to this the teeth of the upper jaw, and especially the front teeth, both to the touch and in biting were very painful, and all the teeth at their necks were entirely covered with a large quantity of very hard tartar. The gums were very much swollen, appeared dark red, almost livid, and gave out a considerable quantity of disagreeable smelling pus. In addition there was an unusual flow of saliva.

The patient was a healthy person, denied all general questions, and said he had never been ill before. The diagnosis in the day-book was, therefore, "Diffuse alveolar periostitis of the upper jaw, together with catarrhal stomatitis."

As the appetite was good and digestion in order, in the first place the tartar was thoroughly removed in several sittings, and a wash was ordered to be used for rinsing the

mouth; at the same time magnes. sulph. was given as an aperient.

After a fortnight the swelling had entirely disappeared from the gums and the teeth much less tender to the touch, but above each of the two upper canines and above each of the two middle incisors of the left side fistulous openings appeared, from which a considerable quantity of pus exuded. In probing the fistulæ portions of necrosed bone were everywhere felt, and consequently pieces of lint soaked in tincture of iodine were laid in, and this treatment was persevered in for a fortnight.

By the middle of May small splinters of bone had become loose, and finally on the 5th of June two sequestra were removed. The larger of the two was $1\frac{1}{2}$ c.m. in length, $\frac{1}{2}$ c.m. in breadth, and showed plainly the front alveolar wall of the right upper canine, from the fistulous opening of which it was removed. The smaller piece of bone was about $1\frac{1}{4}$ c.m. long, and was a portion of the front alveolar border of the upper right incisor.

The patient was then prescribed:—R. Acid. salicyl. 6, 0, Spir. vini rectif. 15, 0, Aq. distill. 200, 0, diluted, to be used three times a day as a mouth wash, and to take iodide of potassium.

At the beginning of July the teeth had lost all sensitiveness to the touch, the patient could bite without any uneasiness, the gums were firm round the neck of the teeth, only the right canine was bare of alveolus and gum from the end of the fang, and the upper right incisor was bare about this (o) much. The other three fistulous openings, after several small pieces of bone had come from them, were entirely healed and the patient able to use the left side for eating, whilst the right could bear cold water with but slight feeling. Every week the whole of the upper alveolus is painted with iodine.

In remarking on this case in a lecture, Dr. Hollænder observed that these cases of idiopathic alveolar periostitis which embraced the whole of the jaw were extremely rare. It is well known that periostitis of the tooth fang passing into the alveolus frequently occurs on the one hand in a carious tooth through exposure of the pulp, and on the other in consequence of intoxication from different poisons, such as phosphorous or quicksilver being introduced into the mouth. But that the whole jaw from one side to the other should

be affected, the teeth being perfectly healthy, and that the well-known consequences of periostitis, namely, Necrosis of the alveolar process, should be systematically developed is an extremely rare occurrence.

Professor Albrect remarked, indeed, in his monograph upon "Diseases of the Fangs" that the rheumatic process from the fang of a tooth frequently became localized in the entire jaw, but then there were always present other symptoms of rheumatism either in the head or neck. Nevertheless, if, according to Albrect, the rheumatic process seized the cavity of the mouth and teeth, there must first, on the other hand, be precedents of disease in the teeth which would serve, so to speak, as starting points for the rheumatic poison.

In our case nothing of the kind was there. The teeth were entirely healthy, and the gums, according to the patient, had from the beginning been concerned in the disease, so that really one would, as was indeed the case in a superficial examination, be inclined to consider it Stomatitis. If the patient can partly make use of his teeth, and has lost all pain, still we can by no means allow that he has come out unharmed from this illness. On the labial side of the alveolus the exposed canine will probably not withstand outside influences, and equally so the incisor, though only the point of the fang is exposed, is in similar danger.

Energetic measures should have been taken at the beginning of the illness, and strong local blood-letting and internal drastics should have been made use of, so that the disease might have run a quicker course.

It is to be hoped in the future that such a case will not be looked upon as scorbutic, and that it will be remembered on the one hand that scorbutis is not of frequent occurrence, and on the other that scorbutis does not begin in the mouth, but pre-eminently in the joints of the lower limbs, only when in a few days different severe pains, principally in the fossa poplitea, are present, with similar appearances in the mouth as in our patient, with the difference that strong parenchymatous bleeding of the gum, mucous membrane of the cheek and the tongue are likewise present, which entirely failed here.

On the Attachment of Teeth.

PART II.

On the Nature of the Alveolo-dental Membrane.*

By CHARLES S. TOMES, M.A., &c.

The teeth of mammals are, in the great majority of cases, planted in sockets of bone, which fit them loosely, the intervening space being occupied by a softish vascular tissue, going by the name of the Alveolo-dental Membrane. With it, in a diseased condition, we are constantly concerned; and we should do well to acquaint ourselves, so far as may be, with its relations in health, so that we may be in a better position to understand its diseases.

Teeth attached by membrane may be grouped into those which are attached by membrane without being situated in bony sockets, and those which are attached to the walls of bony sockets by the interposition of a membrane.

1. Each tooth is formed from a tooth-germ, which consists of a papilla-like dentine bulb, and of an enamel organ capping it. The dentine germ appears simply as an elevation of a part of the mucous membrane at the base of the jaw, without at first any structural alteration.

Then it becomes differentiated in structure, and next, calcified over its apex: as calcification reaches towards its base, and the tooth is thus approaching completion, the mucous membrane immediately contiguous to the base of the papilla (there having thus far been no distinction of the one from the other, the two tissues blending completely one with the other) becomes fibrillated; and by the time calcification is complete, the tooth is held firmly in its place by bundles of strong fibres at one end attached to its surface, and, at the other, losing themselves in the mucous membrane adjacent to it.

The point to be kept in view is this: that the tooth is held in place by a fibrous membrane, the fibrous membrane being nothing more than that same tissue from which the dentine itself was developed, which has subsequently undergone this transformation. Starting from this, the simplest possible method of attachment, we shall possess a vantage-ground for investigating.

2. Attachment by the means of a vascular membrane to the bony walls of a socket.

* Read before the Odontological Society.

If we take the jaws of a *fœtus* at a period when the jaw-bones are but little calcified, we shall find a state of things similar to that represented in fig. 1 ; that is to say, there is a good deal of space between the tooth germ and the forming bone, and this space is occupied by tissue similar to, and in no way divided off from, the formative organ of the dentine or dentine papilla.

In the further progress of the development of the tooth, this surrounding tissue becomes, as it were, squeezed thin between the bone and the rapidly-increasing tooth germ, and it becomes finely fibrous in consistence. In this stage it is known as the tooth capsule, or investing sac of the tooth germ ; and it has been described with a minuteness of detail which tends to exaggerate both its importance and its distinctness of existence. It is nothing more than the whole of the connective tissue which intervenes between the tooth germ and the bone, and the dentine papilla at its base blends completely with it, there being no line of demarcation between the two.

This external tissue, this tooth-sac, is what becomes the alveolo-dental membrane. The point which I have been striving to bring into prominence is, that it originated from identically the same tissue as the dental pulp, and that in all its ultimate differentiation it retains at one point—*i.e.*, the apical foramen—a continuity with it.

It is a thin sheet of finely fibrous connective tissue, rich in blood-vessels and nerves, and not unlike the periosteum of a bone, save that it is quite without elastic tissue. Above, *i.e.*, at the neck of the tooth, it bleeds insensibly with the gum ; at the apex of the root, as before said, with the pulp. It occupies the whole space between the root of the tooth and the bone, and is therefore thicker in some places than in others, and it serves alike as periosteum to the bone and organic covering to the cementum. In other words, there is but one membrane for the two. The tooth has no “peri-dentium” separate from the “periosteum,” as has been stoutly maintained by several authors, who can never have seen a section with both hard and soft parts *in situ*.

As has been before mentioned, it is a fibrous membrane, its fibres, generally speaking, running across between the cementum and the bone ; it is perfectly easy to trace bundles of fibres the whole way across, losing themselves at one end in the bone, at the other in the cementum. They do not by

any means always run horizontally across ; more commonly the fibres pass obliquely upwards or downwards.

When a tooth is extracted the alveolo-dental membrane is torn, the greater portion remaining behind in the socket, while a thin layer of the network remains adherent to the cementum, and comes away with it.

The New Society of Surgeons Practising Dentistry.

We have received the following communication from an "Occasional Correspondent" in New York :—

Lately I have heard from town, and also seen in the MONTHLY REVIEW, much about the forming of a New Dental Society in opposition to the present Odontological Society, and to the exclusion of all dentists except those holding the M.R.C.S. or other medical degrees. I think it is well to ventilate the views of those of us who are far away, and, therefore, unable to attend the meetings of such Society.

I should much like to see a new Society started, even in opposition to the Odontological Society. I think it would cause an increased development of enthusiasm for our work ; but, when a set of men put themselves up as being far above those who have only the dental degree, and wish to keep separate from them, I maintain it shows a snobbishness and priggishness which is sad to look upon.

Again, when I hear a professional brother talking very extensively about deputing to skilled mechanics all mechanical works, and classing such works amongst orthopædic appliances, I say to myself, "This man has not the mechanical ability or knowledge to make or direct the making of them himself, and most likely he has not studied at the bench as all candidates for the L.D.S. are supposed to do." And if he is not able to fully carry out such mechanical work with his own hands, how can he be competent to direct or criticise the work of others ?

Besides, what is the degree of M.R.C.S. ? Why nothing but a licence to practise surgery. It is by no means the highest degree obtainable in this subject.

I should much like to see again a still newer Society formed of F.R.C.S.'s to the exclusion of all who hold a lower degree.

March 9th.

(Signed) M.R.C.S.E.

Odontological Society of Great Britain.

ORDINARY MONTHLY MEETING, APRIL 3RD, 1876.

C. VASEY, Esq., President, in the Chair.

PRESENTATION TO THE LIBRARY.

The PRESIDENT announced that Mr. James Parkinson had presented six numbers of the *Microscopical Journal* to the library.

CASUAL COMMUNICATIONS.

Mr. C. J. FOX brought before the Society for examination a patient whom he had seen that morning at the Dental Hospital. The case was thought of some interest by Mr. Christopher Heath, who had paid considerable attention to diseases of the jaw. At first he (Mr. Fox) was inclined to think it was a case of fracture; but, after further inquiry, he could find no history of any fracture. There was no sign of any blow of any kind, and that led to the inference that there must be loss of substance from necrosis. There was absolute division of the jaw and necrosis of the alveolus, allowing the teeth to be moved. On questioning the patient rather closely, he admitted that, besides having small-pox, he had a very bad attack of syphilis, from which he suffered very much.

In answer to the PRESIDENT,

Mr. FOX said the patient was a temperate man, and denied ever having had a fall or blow when in a state of intoxication.

The patient then entered the room, and was examined by several of the members present.

Mr. CHARTERS WHITE asked Mr. Fox if he intended to treat the case in any way mechanically, because a short time ago he (Mr. White) saw a case where the front of the jaw was necrosed, and a vulcanite frame was fixed in for supplying the missing teeth. This kept the parts of the jaw in apposition, and the lady found the appliance very useful indeed. This necrosis resulted from a blow caused by her babe's head striking against the lower jaw. He thought that Mr. Fox's case might be amenable to the same treatment.

Mr. OAKLEY COLES, referring to the case, said that the central fragment seemed to be quite detached, and the necrosis to have commenced in the lower part of the jaw—

in the symphysis at the lower border rather than in the upper part. This was further borne out by the fact that the gland on the left side was considerably enlarged and thickened, and there was a fistulous opening underneath the chin, which was discharging three weeks ago. He had only seen one other similar case, and that was where a disease of syphilitic origin commenced in the gland and produced a fistulous opening below the jaw, and afterwards a piece of bone became necrosed in the lower border on one side of the jaw. He thought it would be well if Mr. Fox would leave the case alone until the necrosed bone and the teeth came away of themselves, rather than attempt to remove them, as their removal would probably set up such an amount of irritation as would involve a considerably larger portion of the jaw than was at present the subject of disease. He believed that in old syphilitic cases, if the patient was placed under a course of iodide of potassium and the general health looked after, as soon as the bone became separated and was removed there was a great effort at reparative action, and a strong band of fibrous union would be obtained between the two fragments of jaw, on which an artificial appliance could be placed with far better result than by keeping the teeth in the jaw separated by a mechanical appliance.

Mr. FOX said at present his idea was that he should remove the teeth which were projecting so much, then wait till the sequestrum was fit to be removed, and as soon as possible to get the parts in apposition and then make a denture afterwards.

Mr. TURNER said it seemed to him that the cause of division or fracture in the lower jaw was muscular contraction, the two fragments having been deprived of the key-stone that kept them in position—namely, the central part or symphysis of the lower jaw. If this kind of contraction was allowed to go on unchecked, and if the sequestrum was removed, there would be considerable difficulty in gaining proper power over the muscles which had been allowed to go on contracting for a year or two. In the case brought forward by Mr. Fox, he (Mr. Turner) did not think it necessary to remove the bone partially loose; but by putting an interdental splint upon the lower jaw, the fragments could be kept apart, and they would be retained much better in their place when the sequestrum was removed.

Mr. COLEMAN quite agreed with the remarks of Mr. Turner. The objection to removing the sequestrum too early was that certain portions of living periosteum, which it was essential to retain for the formation of new bone, would be removed with it. He could not agree with Mr. Coles as to the reparative action in syphilitic necrosis. His own opinion was that there was a very small amount of reparative action, as very often the periosteum perished with the bone.

Mr. COLES explained that he referred to reparative action in the fibrous tissues, and not to bone.

Mr. WOODHOUSE mentioned two cases (ladies) in which he discovered a fourth molar existing on the left side of the lower jaw. The first case was that of a lady who was in India. She had considerable pain in her jaw, which afterwards resulted in inflammation and suppuration, which relieved itself by a sinus at the angle of the jaw. After two years she went to England and consulted Sir William Ferguson, who brought her to him. He examined the teeth carefully, and the lower wisdom tooth was apparently perfectly healthy, the only thing he could detect being a slight blackness on the enamel of the tooth. It was found afterwards advisable to remove the tooth, which was done. The posterior fang having broken off, was left behind. When probing for it he found an opening behind the wisdom tooth at the angle of the jaw, in which he traced the crown of a tooth, which he extracted with a pair of fine stump forceps without the least difficulty, as it had not the slightest hold on the jaw. Seeing there was such an enormous cavity, he thought it wiser not to attempt to remove the remaining portion of the true wisdom tooth. He saw the lady a year afterwards, before she returned to India, and she had no irritation whatever from the remaining portion of the tooth. On examining the other side of the mouth, he could not perceive a fourth molar. About two years afterwards a similar case presented itself to him, also in a lady's mouth. In this case the tooth had made its appearance through the gum; it seemed to be healthy, and he advised that things should remain as they were. He had again examined the mouth on Saturday last, and found that the supplementary wisdom tooth was decaying, and also decaying the true wisdom tooth, and he therefore advised its removal. Contrary to expectation, he found it was a large well-formed

tooth. The anterior portion of the crown surface had decayed, and also the back of the true wisdom tooth, and being under the angle of the jaw he found great difficulty in removing it. He exhibited models of the cases, which he expressed his intention of presenting to the Museum.

Mr. MUMMERY mentioned a case which had been in the hands of his son. The patient was a civil engineer, residing in South America. On his return to England he consulted Mr. Mummery, jun., and at that time there was considerable stiffness in the jaws, which could only be separated to a very slight extent. The gum was very inflamed and thickened behind the second molar. Free lancing, with incision of a portion of the gum, gave great relief. Three fistulous openings existed on the neck, one below the angle of the jaw, another about an inch above the clavicle, and an intermediate one, which had nearly closed. These were discharging thin pus. A probe was introduced into the upper opening, and passed upwards and backwards in the direction of the lower wisdom tooth, which, after the lancing, could just be detected by a probe pointing forward and inward. As the patient was about to return to South America, and the openings had not closed, it was deemed advisable to extract the tooth, and it was extracted with great difficulty under chloroform, the alveolus being unusually strong and the tooth being very deeply embedded. The extraction was at last accomplished with a pair of very strong bladed bayonet stump forceps. The tooth proved to be a large one, and of abnormal form. About a fortnight later the fistulous openings had all closed, and the patient was entirely free from pain.

Mr. FELIX WEISS, L.D.S., then read a paper "On the Retarded Eruption and the Extinction of Wisdom Teeth. Case of Abscess with Fistulæ from buried Inferior Dens Sapientiæ, lying horizontally below the Alveolar Margin," &c. :—

Dentition having proceeded to the eruption of the second molar, the maxillæ are now fully occupied, and a pause takes place. We wait for the elongation of the jaw backwards, in normal cases from three to five years. If all be then favourable, another molar is added to the circle; but the eruption of this third molar is not generally unattended with pain. We have frequently a series of disturbances, the least of which is a certain amount of suffering to the patient, at times sufficiently distressing to call for professional attention; and upon examining more minutely the results, we perceive that the second molar standing in front and the termination of the alveolus behind, the wisdom tooth not

having a predecessor, and its development being carried on beneath the base of the coronoid process, when the time arrives for its eruption, it has no space reserved for it, and in the generality of cases it cannot take its place without a certain amount of suffering, more particularly in the lower jaw : nor is this limited only to the part affected ; it extends to the surrounding structures, causing the neighbouring muscles to become more or less rigid, and setting up inflammation, attended sometimes by suppuration, the pus not unfrequently burrowing around the periosteum of the jaw, giving very much the appearance of necrosed bone, and, indeed, occasionally leading to necrosis of the jaw. Nor is this the only annoyance resulting from the attempted eruption of the third molar. Frequently the tooth takes a different direction, and remains buried in the alveolus, or even ascends the ramus of the jaw, or becomes impacted against the second molar.

If we continue our observation, we shall also find that this particular tooth varies not only in shape, but also in size. On the right we may have a perfectly-developed molar ; on the left a cubic-crowned tooth, resembling the lower bicuspid. But that which more than anything else distinguishes these strangely variable teeth is the irregular periods at which they are erupted, and that they are in many instances absent altogether. Feeling that some reliable statistics on this interesting subject would be desirable, and having failed to discover any record that can guide us to a true estimate of the number of wisdom teeth absent in a given number of cases, I some time ago began to draw up such a record. The plan I adopted is very simple. I commenced by excluding all cases under the age of 26, taking particular care that the wisdom tooth had not been extracted, and where any doubt existed did not register the case at all. I took down first the name of the person, as a guide for future examination, if necessary ; then the age, followed by the present state of the mouth as regards the wisdom teeth ; and lastly, remarks upon any abnormality that might present itself. In private practice this is a longer and a more tedious investigation than any one unacquainted with the detail of an operation-room could readily believe ; but it has this great advantage ; you can refer to your list and vouch for the accuracy of your statistics. I am sorry that the number of cases is not so large as I hope eventually to be able to classify ; and I may here remark that arrangements might be very readily made at our Dental Hospitals to record such statistics. There are many points that I think might thus be satisfactorily elucidated.

According to my observations,

Of 312 persons over 26 years of age,

152 had deficiencies of wisdom teeth ;

29 had none at all ;

44 had deficiencies in the upper and lower ;

76 had deficiencies in the upper only ;

32 had deficiencies in the lower only ;

21 with deficiencies were over 50 years of age ;

In 312 persons, 304 wisdom teeth were absent.

It will readily be understood that, to obtain a return of any great value, of persons having deficiencies of wisdom teeth in advanced life, a very large number of mouths must be examined, and the greatest care taken that our records are carefully compiled ; for it is sometimes difficult to decide whether the tooth has been erupted and extracted, or

never erupted at all. As a rule, where the tooth has never been erupted, the gum will present a square appearance; but where it has been extracted, the absorption will have defined the ridge of the maxilla.

That the wisdom teeth are erupted late in life we have plenty of evidence to prove, but that they are sometimes absent altogether I am fully persuaded, and that they take the first place as absentees my late examinations seem to indicate. I have seen several mouths where the third molar has been cut after the age of 70, and in one case a patient had attained his 84th year. I have only been able personally to record a deficiency of laterals in four instances, and in two of these the teeth were cut later in life, after wearing artificial work.

I have particularly noticed that wherever any of the fourteen permanent teeth are absent, the wisdom teeth will be found to be missing also. In the table of deficiencies of wisdom teeth already quoted, I have registered two instances where the superior lateral incisors have never been erupted, and in both these cases the wisdom teeth are also absent, although the patients are over 30 years of age. I can mention another person, aged 40, in whose mouth the second bicuspid of the lower jaw is wanting, and in its place we have the temporary molar, while in both the upper and the lower jaw there are no wisdom teeth. A similar case is also entered where the temporary molars are standing on both sides, but neither in the one jaw or the other are there any signs of the third molars. This lady's age is over 40. As I have said, in every case coming under my notice, where any deficiency of permanent teeth exist the wisdom teeth are also absent.

Several very interesting questions spring out of these investigations,—questions I should like to see this Society endeavouring to answer. May not the wisdom tooth remain through life unerupted? You will observe in various specimens, jaws where the teeth are ground down, giving every indication of years of wear, and where the subjects must have passed the meridian of life, and yet the third molar remains buried in the alveolus.

Again, may not the original tooth-germ be sometimes absorbed, leaving no vestige of its past existence? I am sorry that I am not in a position at present to bring forward many preparations to establish my views on this subject; but as far as those investigations have extended, I have no hesitation in stating that I believe such to be the case. In one lower jaw I had an opportunity of examining, the fourteen teeth were all perfectly formed; but there was no indication of a wisdom tooth ever having been developed. In another, the fourteen upper teeth were all thoroughly erupted, but no third molar could be discovered. I believe, Mr. President, that the extinction of the *dens sapientie* opens a field for much interesting research well worthy of the consideration of the profession; and I look with considerable interest to the remarks my paper may possibly elicit from the members of this Society.

In Dr. Darwin's "Descent of Man," after remarking upon the gradual disappearance of the wisdom tooth, the smallness of its size, and the late period at which it is erupted, he goes on to contrast the number of the fangs of this tooth among civilised people and the earlier savage races.

It should be borne in mind that this change is more perceptible in

the upper than the lower ; indeed the lower wisdom tooth, where it is erupted, is usually of the normal size, and this will account, in some measure, for the disturbance frequently created by its eruption in that jaw more than the upper. The two fangs are certainly somewhat flattened and turned backwards, but in other respects the tooth has very little changed. In the upper we have a gradual merging of the three fangs into one, and the size of the tooth, as I have said, is becoming smaller and smaller, until at length we very commonly find the upper dentes sapientiæ no larger than lower bicuspid.

Mr. COLEMAN said the first portion of the paper opened up many subjects for consideration, especially in relation to the views which had lately been brought so prominently not merely before the profession but before the public at large by Mr. Darwin and Mr. Herbert Spencer. With regard to the second portion of the paper, he mentioned an interesting case of a lady past middle age, and remarkably stout, who had been attended for abscess at and below the angle of the right lower jaw. Sir James Paget, under whose care she was, after examining the jaw carefully for dead bone, struck against something, and after making an incision a view was obtained of a portion of one of the cusps of a wisdom tooth, embedded in the bone, from which blood as well as pus welled out. After considerable difficulty the tooth was removed in two portions, the lower wisdom tooth on the right side lying almost horizontally across the jaw, the crown of the tooth pointing pretty much in the direction of the masseter muscle. The second case was that of a gentleman who had suffered for twenty-four years. He had been treated during that time by eminent surgeons for diseased bone, and had even had the lower jaw trephined with the view of opening up an internal abscess in the bone, but unfortunately the trephining never hit upon the impacted and misplaced tooth. In this case Mr. Clover first administered nitrous oxide, and he made a free incision to the bone. The patient was then allowed to recover from the nitrous oxide until bleeding had almost entirely ceased ; and then, with the aid of an elevator and a long pair of forceps, the wisdom tooth was without much difficulty removed. The first patient got rapidly well ; but the second patient, who was in a very indifferent state of health, recovered very slowly, and although it is some four or five years since the operation was performed, there was still a very considerable thickening about that part of the jaw.

Mr. C. S. TOMES said that in the case of some of the

higher monkeys, such as the gorilla, the third molar tooth was as large, and sometimes larger than the first and second molar, but instead of its having a stunted soft crown, it would have the ordinary characteristic arrangement of the cusps. Further than this, it was generally cut before the attainment of sexual maturity, that is, before the creature had cut its large canine teeth. In the lower races of mankind it would be found that the wisdom tooth was a large functional tooth. It preserved the characteristic pattern of cusps. The upper wisdom tooth would have an oblique ridge, and the second wisdom tooth would resemble a second lower molar. In the civilised races it would be found that it was quite exceptional for the wisdom tooth to be a characteristic molar, and quite exceptional for the lower wisdom tooth to have the four cusps distinctly and well developed. In any group of animals which were obviously united by descent, the tooth, or any other organ, which was gradually disappearing, would be found to be a variable organ. An organ which was in full use did not vary much. The same causes which had been brought together by Darwin under the name of natural selection prevented it from doing so, but so soon as it was brought into functional inactivity, then it became very variable. The mere fact of variability would lead one to suppose that the organ is disappearing. He mentioned a case that occurred in his own practice in which a patient had suffered from intense neuralgia in the eyeball. On looking into the mouth there were no decayed teeth, but the upper wisdom tooth stood very nearly horizontal, with the masticating surface looking outwards. The wisdom tooth was extracted, and the neuralgia disappeared. A year afterwards, very much to his surprise, the patient came back, and in the same situation as that in which the wisdom tooth formerly was there was the cusp of another tooth, and two years from the time in which the case had been presented to him, an additional wisdom tooth had made its way down and was almost normal in position, and there was no recurrence of neuralgia. He mentioned another case which did not bear so strictly on the question of wisdom teeth. The patient had a small fistulous opening and an obstinate discharge, although the mouth was edentulous. All the teeth had been taken out for the purpose of putting in an entire set. The patient gave an account of the case which subsequently

turned out to be untrue. She declared that the discharge had never existed prior to operative interference. On probing, he found nothing; and he then enlarged the fistulous opening, and found unquestionably the crown of the tooth, which proved to be canine, lying very nearly horizontal. The crown was all honeycombed and stunted and puckered in a peculiar sort of way, but still it could not be doubted that it was a canine. The patient was 67 years of age, and had never suffered the smallest inconvenience. The case was instructive rather as showing how a patient's own statement may very often mislead one.

The PRESIDENT said he had removed a long bicuspid under similar circumstances as the last case related by Mr. Tomes. It had developed backwards, as if it had run along under the roots of the molar tooth, and it was not seen until all the teeth were lost and another set of teeth had been worn for two or three years.

Mr. TURNER said that by the disappearance of the wisdom teeth the profession were losing about 12 per cent. of their sources of revenue; and it had been a source of great comfort to him to hear of the cases brought forward by Mr. Woodhouse and Mr. Tomes, which showed that nature was making a struggle in their behalf. For his own part, he wished it every success. (Laughter.)

Mr. MUMMERY said that among the more powerful and energetic races of Africa he had found the third molar present in the lower jaw, but in the more enfeebled races he had found the third molar absent.

Mr. GEO. BUCHANAN asked if any member present had ever met with a case where, after the first molar had been extracted in youths under fourteen, the wisdom teeth were not all in and well developed.

Mr. C. WEST said that wherever there was a well-formed dental arch, accompanying that there was a well-formed wisdom tooth; but where there was a deterioration of the physical structure of the patient there were abnormal appearances in the wisdom teeth.

Mr. TURNER said that before the age of fourteen he had had his anterior molar tooth extracted, and since then the second molar had been extracted, but the wisdom tooth had not made its appearance.

Mr. WEISS having briefly replied, the meeting separated.

Odonto-Chirurgical Society.

ANNUAL MEETING, HELD AT EDINBURGH, MARCH 13TH, 1876. W.

A. ROBERTS, Esq., M.D., L.D.S., President, in the Chair.

The minutes of the previous meeting, as also the annual report by the Treasurer, were read and approved of.

Mr. J. O'Duffy, Dublin, was balloted for, and elected a member.

Messrs. R. Hooper and G. W. Watson, Edinburgh, were proposed for membership.

The following members were, upon the recommendation of the Council, elected office-bearers for the years 1876-77 :

President.—G. Buchanan, Esq., Glasgow.

Vice-Presidents.—J. K. Chisholm, Esq., L.D.S., D. Hepburn, Esq., L.D.S.

Treasurer.—P. Orphoot, Esq., M.D.

Secretary.—A. Wilson, Esq.

Curator.—D. W. Hogue, Esq., M.D., D.D.S.

Council.—W. A. Roberts, Esq., M.D., L.D.S., W. Campbell, Esq., L.D.S., Dundee, C. Matthew, Esq., J. R. Brownlie, Esq., L.D.S., Glasgow.

The thanks of the Society were voted to Mr. FINLAYSON (Leith) for his demonstration of the different processes involved in the production of cases in continuous gum work, given to the members of the Society at an adjourned meeting held at his residence on Saturday, 11th December, 1875.

The PRESIDENT.—Gentlemen, before leaving this chair I have taken the opportunity afforded me to give you one or two cases, out of many I have recorded in my case-book, which I thought might possibly prove somewhat interesting, which I will style "odds and ends."

As our time is limited I shall confine myself to a mere sketch of those cases, and will crave your indulgence for a short time while I lay them before you, such as they are. The first case I shall refer to was a chloroform case.

On a Saturday afternoon, after my assistants had left for the day, Mr. B—, a stout gentleman of about 50 years of age, called upon me to have the left upper wisdom tooth removed, and expressed a wish to have chloroform; I objected, upon the plea that my young men had left for the day, and stated, I always preferred having one of them present when I administered chloroform. I was over-persuaded, however, Mr. B— saying he was sure he would be "as quiet as a lamb." I put him under the influence of the anæsthetic, and certainly up to this point he was perfectly quiet. I had no sooner applied the forceps, however, when a violent struggle commenced. I feeling a good deal annoyed, supposing I had not put him deep enough under its influence, apologised for my apparent mistake, and gave him some more. While he was inhaling this second dose, I could not help thinking he must have been under the full influence of the chloroform after all. Under this impression, I made up my mind to act accordingly, that, once having got hold of the tooth by the forceps, I would not let go until I had it out. As before, the same result, for the moment I seized the tooth the same violent struggling went on, but being on the *qui vive*, and determined not to be foiled I held on. Mr. B—, driving his

arms furiously about, stretching himself back to his full length, so, what with his struggles and my persistency, at last the operating chair fell over, and we both accompanied it, "but I got out the tooth," the patient the while on his back in the chair and I on the ground beside him. After the extraction of the tooth, I with great difficulty rolled him out of the chair on to the floor, fearing suffocation from the flow of blood entering the windpipe. Upon recovery, his look of astonishment was most ludicrous.

Upon my explaining to him why he was in such an ignoble position, he laughed heartily, and said he was totally unconscious from the beginning, and that he had had an exciting dream, which was, that he had received a message from the country of "life and death," that he was running down to catch the train, when a Mr. Tait stopped him, and held on to him, but at last, after a violent effort, he broke away from him, and wound up his description of his dream by saying, "Eh ! man, but I gave him an awful thrashing."

I had rather an interesting case of a young lady, who, accompanied by her medical man, called to have a molar extracted under the influence of chloroform ; the whole process was quite satisfactory, but to our surprise, after the active effect had passed away, we found our patient quite sensible as to hearing, but could neither speak nor open her eyes ; she replied to our questions by smiling and nodding her head only, nor did she recover her speech and power over her eyelids for several hours afterwards ; no bad effects followed.

As I have given one case of violence under chloroform, I will confine myself to the relating one other.

A medical man, who suffered much from his teeth, came to have an offending member of his mouth removed. He was a powerful man, and fully six feet in height. I had repeatedly given him chloroform, and upon each occasion was obliged to have present no less than three assistants to hold him in the chair.

Upon one occasion he nearly overcame all four of us : he got out of the chair, rushed like a maniac round the room, roaring all the time like a bull. Whenever he came to himself he invariably burst out laughing.

Upon one occasion he was confined to bed, and sent for me to extract a tooth for him. I found him in a small, open French bed : his wife was present. I flattered myself, "*surely*, as he is in bed on his back, we might be able to manage him." The chloroform was given fully ; but, as in the former case, the moment I applied the instrument, the old state of matters began ; a regular scrimmage began in the bed, which ended in his pitching me from one side of the bed to the other. I certainly did not feel it a very dignified position finding myself on *my* back on the floor. We ultimately got a street porter and a servant to hold the patient, and even then the operation was by no means a simple one.

In all the times I have given this gentleman chloroform, the effect was the same ; perfect in its action, the patient quite unconscious of anything going on.

Since the introduction of the nitrous oxide gas, I have not given him chloroform, but the gas—and, singularly enough, on the three several occasions I have done so, he has been perfectly quiet, as far as *motion* was concerned, but he roared all the time most lustily. The last two

times he had the nitrous oxide gas was for the removal of a nasal polypus.

My friend Dr. Peddie mentions a case of his. A gentleman to whom he had given chloroform became very restless, getting up and jumping round the room like a sparrow, the worthy Dr. holding him for fear of his hurting himself, and jumping with his patient until the effect wore off.

The most amusing case I have had was where a Russian lady, while under the effects of chloroform, used *very* strong language indeed, expressing herself in French and Russian alternately. Every time she was under the influence of the drug the result was always the same, even to the same words. The peculiarity of this case is, only under chloroform is there the slightest approach to such an indulgence, the lady being a refined and highly-educated person.

Another lady, while under the anæsthetic, "had a dream," as she called it. Upon recovery, she told me that she had been in the country for a fortnight. She told me of all her amusements during that time; but, above all, that there was a most beautiful baby she was so fond of; but one day they tore this lovely infant from her, and forced her into a boat. When she awoke she was delighted to find it only a dream.

I may mention the case of another lady, while under the effects of chloroform, supposed she had been translated to heaven. She imagined that she saw her Redeemer and spoke to Him, but was ultimately thrust out of His presence. Upon her regaining consciousness she appeared like a person out of her mind. After a good deal of persuasion, she told me this dream: it had affected her so deeply, she declared no amount of pain whatever should induce her to take chloroform again; nor, as far as I am aware of, has she done so.

I will now content myself with chloroform cases, and doubt not each and all of you have experienced many similar cases.

Before I leave the violent cases, I should like to mention rather an amusing one; it is that of an Irish labourer, who came one morning to have a molar extracted. He had no chloroform, but instead he had plied himself well with *whisky*—in fact, he was three-fourths intoxicated. As soon as he was seated in the operating chair he began swearing at a great rate (rather putting my Russian lady in the shade), shouting out that if I hurt him in the least "he'd knock me down." He kept repeating this so often and so violently, I began to think it might be as well to guard against this contingency of being knocked down. I got up from the workroom a couple of assistants, and made them stand at the back of the chair, and if they saw the least attempt at violence, to pin him down. Sure enough, as soon as I had applied the instrument, up went his clenched fist ready to strike; he was at once secured. Then came my turn. Holding fast by his grinder I gave it a good shake, and said: "You drunken scoundrel! You beg my pardon at once for your shameful conduct." Still he threatened. After another good shake of his tooth, I said to him, "Well, my good friend, here you are, and shall stay till you are quiet," every now and then letting him feel by a good twist that he was at my mercy, but not attempting to extract his tooth, which I was determined not to do until I had quite subdued him. At last, he muttered out that he was sorry, and besought me to take out his tooth. This was all I wanted,

so out came the tooth: he sat perfectly quiet. My pleasant tweeks upon his molar went a good way in sobering him, for I did not spare him in the least: it was a rich scene, and highly enjoyed by the young men.

The most unlucky affair I have met with was in the case of a "young lady," that is, of an uncertain age, who was an annual patient, paying a certain fee by the year. One day she came to me to have an abscess treated; I required to open it; she was very timid, so much so that I could not persuade her to keep her head still; at last I placed my hand on the top of her head to keep it steady; you may judge of my surprise when I found the head still moving from side to side, while that which my hand was resting upon was quite steady. At once I saw what was wrong; I immediately turned myself round so that she might rectify matters without my observation, while I appeared to be busy wiping my lancet.

This wig was a most elaborate affair, covering the entire head, with splendid top knots, large comb, and long ringlets down each side of the head. Now my unfortunate blunder arose from taking off my hand just as the wig turned round, one set of curls hanging over the nose, the other at the back of the head. No one could have acted more delicately in the affair than I did, yet I never saw that lady again after that day.

As to the nitrous oxide gas; not having had so many cases as of chloroform ("of which I have had 4,000, and about 700 cases of gas"), I have not, of course, so many cases of interest to report. I, however, may mention one or two. The first was that of an English clergyman, who desired to have the gas; he was extremely nervous, so, at his request, by way of giving him courage, I had to explain the whole process to him, his wife sitting in an easy chair in the room. While talking to him, viz., my reverend patient, the bag was filling all the time. My attention being taken up with the required explanation, I quite forgot the filling of the bag, when all at once it burst with the report of a pistol, up started the patient, he bolted out of the room, and was up stairs into the drawing-room like a shot. But the most amusing part of the scene was the perfect coolness of the lady, who was sitting quite placidly in her chair. She said, after her husband's sudden disappearance, "Poor, William, he is so nervous." "Of course," she continued, "that is the usual way you give the gas, isn't it?"

I am almost afraid of tiring your patience, but I should like to refer to a rather startling effect produced upon a young lady of about fifteen years of age. After the effect of the nitrous oxide gas was produced, and the tooth extracted suddenly, she became as rigid as a stone, her body bent backwards to a most unpleasant degree. After application of cold water to the face, friction, &c., she soon recovered, and exhibited no further disturbance than is usual after the inhalation of the gas.

Last week I had a similar case. This was that of a boy twelve years of age, the treatment being the same as in the former case, and with the same satisfactory result.

These cases happening so near to each other in time, and so alike in every way, I should, had we made the gas ourselves, feared there was some impurity present, but as I always use the gas prepared by the Messrs. Coxeter, I can only look upon it as a coincidence.

I had an unpleasant case in that of a lady, from the country, while

under the effects of the gas, passing her urine freely—a most unpleasant accident for all parties.

One more case and I have done. I must confess it is not a very pleasant subject, but certainly characteristic.

A young lady, about 30 years old, wore a pivoted front tooth; by accident she swallowed it; she called for advice, was recommended to eat solid food, and not to take any medicine. She at the same time got the impression for a new tooth. To our surprise she called the next day saying she would not require the new tooth, as she had found the old one. She had searched for it with a piece of stick, and having thus found it, wished it replaced, which was done. I suspect you will be inclined to say, as we did at the time, "The nasty body."

I have, as no doubt most of you have done, met with very ingenious substitutes for artificial teeth, made by patients for themselves.

One lady came to me to get an upper set. She asked me for a pair of scissors; with these she cut some threads that were about a bicuspid, she then took out of her mouth a string of small pieces of bone; she explained to me that, living far in the country, she had fallen upon a plan of her own to supply the deficiency in her mouth in the mean time, and this was, she had filed these bits of bone out of the handles of old tooth-brushes. She then pierced one end of each piece with the point of her scissors, strung them on a silk thread, and tied them in position, and wonderfully well they looked, I can assure you.

The next I should like to mention was that of a gentleman, also from the country; he had lost his two upper front teeth, I believe from an accident; he had filled up the space with a piece of cork, and splitting a quill fitted pieces on the cork to represent the two teeth he had lost.

Not to multiply cases further, I will only mention in conclusion a stopping case, the patient being a gentleman shortly to start for India; he wished a tooth stopped, which was done in gold. He expressed a wish to have his mouth carefully examined, as he was to be abroad for some years, this was done, a small decay was discovered, until we arrived at the eleventh small cavity; at this stage the gentleman looked up in my face with a waggish smile, and said, "Doctor, I think you are making the holes." In after years he thanked me warmly for the good I had done him, not having required any Dental operation during his absence of six years.

I could give you many more such cases as I have now had the pleasure of doing, but I must really not trespass on your time further upon these subjects—not very scientific ones, I freely admit.

I have now, gentlemen, come to the end of my reign as your President, and before I resign my "staff of office" to our President elect, viz., Mr. George Buchanan, of Glasgow, allow me to thank the members of the Society, the members of Council, and last, but not least, our excellent Treasurer, Mr. Hepburn, as also our worthy Secretary, Mr. Wilson, for their uniform support and sound advice during my term of office.

It is now my pleasing duty to inform you of the continued prosperity of the Odonto-Chirurgical Society. The only thing we have to regret is the absence, for a lengthened time, of one of our oldest members from indisposition, and that of one or two members from other causes.

We have had excellent papers during the session. I do not like to

particularise, but I cannot refrain from alluding to one of these on "Shrinkage of Amalgams," by Mr. Brownlie, of Glasgow, which was thought worthy of discussion in London as well as here.

Nor can I allow myself to let this opportunity pass without referring to the generous conduct of Mr. Finlayson in devoting an entire day to show to the members of this Society practically the process of mounting pieces in mineral, called the "continuous gum work." A more interesting day (to say nothing of the elegant collation provided for us as well) I am sure those members of the Society who were present will agree with me we have not experienced for a long time, and is a pleasing result of the good feeling produced by our associating together as a Society.

When the simplicity of the whole process is seen, it excites our admiration when compared to what mineral block and tooth-making used to be some thirty years ago, as Mr. Buchanan and Mr. Cormack will bear me out in saying; along with myself, they had their own share of such work. I am sure neither of these gentlemen will ever forget the widow of a mineralogist (who lived in Register Street), and supplied us with felspar, rock crystal, "titanum," &c., and whom they dubbed with the name of Mrs. Rock Crystal. I fear I have taken up too much of your time, yet I will intrude still a little further on your patience, while I frankly confess when you elected me as your President two years ago, I accepted that honour with a feeling of nervousness, knowing my own inability to do full justice such a position required of me, and yet I still further confess I have a feeling of regret at the prospect of retiring into the ordinary duties of the Society once more.

Allow me now, gentlemen, to thank you individually and as a Society for the great indulgence you have accorded me in all my shortcomings during the two years I have had the pleasure of acting as your President.

Gentlemen, I now retire in favour of our future President, Mr. Buchanan, wishing him and the Odonto-Chirurgical Society every prosperity in days to come.

On the motion of Mr. WILLIAMSON, the thanks of the Society were given to the retiring President for the manner in which he had filled the Chair for the last two years.

Mr. BUCHANAN having taken the Chair, briefly thanked the Society for the honour they had conferred upon him.

Liverpool Dental Hospital.

The Annual Meeting of the Friends and Subscribers of the Liverpool Dental Hospital was held on Monday, the 28th February, in the Mayor's Parlour, Town Hall, Liverpool. This was the largest and most influential Meeting which has ever been held in connection with the Hospital.

His Worship the Mayor (Lieutenant-Colonel Thomson) occupied the chair, and among those present were Alderman Hubback, Dr. Kisch, Dr. Dawson, Messrs. E. Grindley, T. E. Priest, W. T. Bryan, D. Campbell (Hon. Treasurer), W. J. Newman (Hon. Secretary), R. E. Stewart, H. E. Hime, D. Marples, T. Brakell, W. Collings, G. Fowler,

T. W. Fay, C. R. Copeman, A. B. G. Rogers, R. Jones, E. A. Morgan, and C. T. Stewart, &c.

Mr. Councillor Campbell read the Fifteenth Annual Report, which was as follows :—

FIFTEENTH ANNUAL REPORT.

The Committee of Management of the Liverpool Dental Hospital have again the pleasure of congratulating its Governors and Friends on the steadily increasing usefulness of this Charity, and on a growing appreciation of its utility by the public during the year just ended. The Report of the Dental Surgeons furnishes satisfactory evidence of this; the number of admissions for 1875 being 5,867, or an increase of 404 over the admissions of the previous year. This fact alone most indisputably proves how thoroughly the poorer classes of Liverpool and its neighbourhood, for whom the Hospital was established, value the advice and assistance gratuitously bestowed upon them daily. Another matter for congratulation is, that at a recent meeting of the Council of the Royal College of Surgeons of England, it was resolved that the practice of the Liverpool Dental Hospital be recognised in connection with the curriculum required for the Diploma in Dental Surgery, so that Law 2 of the Institution is now in operation, viz:—"That the Hospital shall be a School of Practical Dental Surgery, open to all Students of Dentistry, under such regulations as shall be determined by the Committee of Management." The Committee have to announce some important changes in the Hospital Staff:—Mr. W. J. Newman, the Founder of the Institution, and Mr. R. E. Stewart, Senior Dental Surgeon, have been appointed Consulting Dental Officers to the Hospital; whilst Messrs. E. J. M. Phillips, T. F. Austin, and E. A. Morgan have been added to the Dental Staff, with Mr. C. T. Stewart as Assistant Dental Officer. The anticipation of the Committee that the amount of successful work carried on at the Hospital would be followed by a corresponding augmentation of Subscriptions and Donations on the part of the public, not having been realised, they feel constrained to press the claims of the Institution upon the liberal attention of its friends and supporters. Having decided upon securing permanent premises for the new Hospital, though they find difficulty in meeting with an eligible building, the Committee would remind the supporters of this Charity, which is so increasing in popularity, that the estimated sum which will be required to meet the necessary outlay consequent upon removal to a more commodious building is about 3,000*l.*, while the amount in the Bank already contributed towards the "New Hospital Fund" is only 166*l.* The Committee confidently trust that by the enrolment of new donors and subscribers, and by the occasional receipt of some share in the munificent bequests so frequently made to the charities of this town, they may be permitted the gratification during the current year of seeing the New Hospital inaugurated upon a scale in all respects creditable to the wealth and public spirit of so important a town as Liverpool.

In conclusion, whilst thanking the subscribers for their continued support, the Committee look for the generous assistance of all who have it in their power to further the interests of this most valuable Charity.

Mr. Councillor Campbell also read the Treasurer's Statement, which was as follows :—

DENTAL HOSPITAL ACCOUNT, 1875.

By Subscriptions - - £66 13 6	To Balance due Treas-
„ Donations - - - 10 1 0	urer, 1st January,
„ Patients' Contribu-	1875 - - - - £3 8 8
tions - - - - 16 4 2	„ Rent of Hospital,
„ Hospital Sunday	one year- - - - 32 0 0
Fund- - - - - 23 5 0	„ House Expenses,
„ Balance due Treas-	Coals, Gas, Water,
urer - - - - - 2 19 9	&c. - - - - 16 12 8
	„ Advertising, Books,
	Printing, &c. - - 18 5 4
	„ Stamps, Stationery,
	Collecting, &c. - - 4 17 4
	„ Assistant Dental
	Surgeon, one qtr. - 10 0 0
	„ Hospital Supplies,
	Fixtures, &c. - - 33 19 5
£119 3 5	£119 3 5

24th February, 1876.

D. CAMPBELL.

NEW HOSPITAL ACCOUNT.

By Balance in Bank, 31st December, 1874 - -	£163 0 7
„ Bank Interest to date - - - - -	3 13 2

Amount in North and South Wales Bank £166 13 9

D. CAMPBELL.

His Worship the Mayor then said,—Gentlemen, I have now the pleasure of moving “That the report and statement of accounts now presented be adopted, and that copies be printed and circulated.” In doing so, I have the greatest pleasure in being able to state that the Dental Hospital has now become one of our recognised charitable institutions. (Hear, hear.) By many it was thought that such a charity, having charge of one branch only of surgery, was unnecessary; but facts and experience have proved the contrary, and shown the usefulness and necessity of this Hospital. When about 5,000 patients are admitted to its benefits, and above 7,000 operations are performed in one year, it should surely command our support, especially as its surgeons treat of a disease that causes considerable suffering and no small amount of interference with the general health of the sufferers. Amongst the poor, diseases of the teeth are very prevalent, and many advantages are presented to the suffering by this charity, which I trust may be supported as it deserves by all desirous of alleviating the sufferings of their poorer brethren. (Applause.) I have now the pleasure to call upon Mr. Hubback to second the motion.

In responding to the request of His Worship, Mr. Hubback said,—Mr. Mayor and Gentlemen, I have much pleasure in supporting the resolution which has been placed before me. There is no doubt that the small outlay required by the working of the Institution, accounts in some degree for the comparatively small support given to it by the public. (Hear, hear.) It is but a small undertaking, and we must

remember that people are very apt to look at things from a point of view which they cannot admire unless they are large. This Institution (the Dental Hospital), although small in regard to its expenditure, is evidently large as regards the good it has been the means of doing. The report sets forth that during the last year, over 5,000 individuals have been relieved at this Hospital. Now, any one who has ever had the toothache cannot but feel that to be relieved of that unfortunate malady, is at times the greatest relief that can be accorded to human nature. (Hear.) We all know that unless a man has a good digestion he is very often out of sorts; and we equally know that he cannot have a good digestion unless he can masticate properly; and we equally know he cannot masticate properly unless he has good teeth. I am sure that this Hospital will therefore recommend itself to the town generally, and I sincerely trust that when the next distribution in connection with the Lyon Jones' bequest takes place, the Liverpool Dental Hospital will be remembered. (Hear, hear, and applause.) It has been remembered in connection with the Hospital Sunday contributions; and I sincerely trust the executors of the Lyon Jones' bequest will, in their second distribution, also remember this deserving Institution. (Loud cheers.)

The resolution was carried unanimously.

Mr. Councillor G. Fowler then said,—Mr. Mayor, I have very great pleasure in rising at your request to move the second resolution, which is—"That the thanks of the Meeting be given to the President, Vice-Presidents, Committee, Honorary Treasurer, Honorary Auditor, and Honorary Secretary, for their valuable services during the past year." Mr. Mayor, this is the first opportunity I have had of being present at the Annual Meeting of the Dental Hospital, and, knowing as I do a good deal of the working of other institutions, I feel the greatest pleasure in having this opportunity of moving a resolution as a mark of the appreciation of the services rendered by the President, Vice-Presidents, Committee, and other officers, who have done such an amount of good during the year. If they could only hear the kind remarks passed upon the Institution by the poor, it would be a source of very great pleasure to them, and they would not regret the work which they have expended in connection with the Dental Hospital. (Applause.)

Mr. R. Jones: It is to me a pleasure and a privilege to simply second the resolution which has been proposed.

The motion was carried unanimously.

Mr. H. E. Hime: Mr. Mayor and Gentlemen, I may also say I have never had the opportunity of being present at the Annual Meeting of the Dental Hospital, as a member of the Committee. It now gives me great pleasure to move "That the best thanks of this Meeting and of the Subscribers be given to the Consulting Physician, Consulting Surgeon, and the Dental Surgeons, for their professional services during the past year." After the very able manner in which the services of the Physician and Surgeons have been referred to, it requires no words of mine in submitting this resolution, and therefore I now merely move its adoption.

Mr. E. Grindley: Mr. Mayor, I have great pleasure in seconding this resolution. Of all the learned or scientific Members of Societies, I think none are more noble or more entitled to the thanks of the com-

munity than those of the medical profession, especially those gentlemen who, from time to time, at great inconvenience, devote their skill and time to the relief of suffering humanity. (Hear, hear.) With regard to the Medical Officers of this Charity, I have no hesitation in saying they will bear comparison with those of any similar institution in the kingdom. (Applause.)

The resolution was carried unanimously.

Dr. Dawson : Mr. Mayor, I have great pleasure in moving the fourth resolution,—which is—“That Law 5 shall in future be as follows:—The Hospital shall consist of a President, Vice-Presidents, Governors, Treasurer, Auditor, Honorary Secretary, Consulting Physician, Consulting Surgeon, Two Consulting Dental Surgeons, Six Dental Surgeons, One Assistant Dental Officer, and Matron.” Mr. Mayor, in submitting this resolution, I cordially endorse all the remarks which have been made, by yourself and by Mr. Alderman Hubback, as to the usefulness of this Institution. I can only hope that the public of Liverpool will thoroughly appreciate its value. Looking at what Liverpool is now, and what it was twenty years ago, we find that great benefit has resulted amongst all classes of the community in regard to health. Twelve or fourteen years ago, indigestion was indigenous amongst the people; but now it is very rarely to be met with. This, no doubt, is to be attributed to the high class of Dentistry which now prevails. In proposing this resolution, I have also the greatest pleasure in referring to the fact that the Council of the Royal College of Surgeons of England has resolved that the practice of the Dental Hospital in Liverpool shall be recognised in connection with the curriculum required for the diploma in Dental Surgery. This is a proud privilege, and I congratulate you on the compliment. (Loud applause.)

Mr. C. R. Copeman : Mr. Mayor, it is a matter of considerable congratulation to those previously connected with the Institution, to find that they can show such a staff of willing and able gentlemen who are ready to take up their position as a portion of the working staff of the Dental Hospital. It is very satisfactory in this way : the larger the staff, the more efficient will be their labours ; the greater the sphere of usefulness occupied by the Institution, the more sympathy and generosity will be shown by the public towards their labours. (Applause). I have great pleasure in seconding the resolution.

The motion was carried unanimously.

Mr. T. Brakell : I beg to move that the Committee of Management for 1876 consist of the following Gentlemen : President, Lieut.-Col. Steble ; Vice-Presidents, Rev. D. Anderson, M.A., T. D. Anderson, Henry Greenwood, Alderman Hubback, S. Kisch, M.D., David Marples ; Honorary Treasurer, David Campbell, 54 Parr-street ; Honorary Auditor, Thomas E. Priest ; Committee, Herbert Campbell, C. R. Copeman, Thomas Dawson, M.R.C.S., Edward Grindley, Robert D. Holt, H. E. Hime, Edward Jackson, Andrew Leighton, A. B. G. Rogers, R. A. Watson ; Honorary Secretary, William J. Newman, 75 Mount Pleasant ; Matron, Mrs. Clarke. Gentlemen, as most of these names are very well known to you, it needs no words from me to recommend them. In their hands I am certain the affairs of the Institution will be conducted, as heretofore, in a very able and conscientious manner. (Hear, hear.)

Mr. W. Collings : I have great pleasure in seconding the motion.

The resolution was carried unanimously.

Mr. W. J. Newman : Before proposing the next resolution, I should like to read a letter I have received from Colonel Steble, our worthy President, dated Palace Hotel, Buckingham Gate, Feb. 23, 1876. He says :—

“ My dear Sir,

“ I regret very much I cannot attend the Meeting on Friday, owing to severe indisposition ; and for the same cause I shall be prevented attending the Annual Meeting at the Town Hall, on the 28th inst.

“ With the exception of a few hours, I have been bedfast since the 11th, owing to an attack of Bronchitis. The Doctor says I am taking a turn for the better, but will have to be most careful for some time to come.

“ I consider the Dental Hospital one of the most useful Institutions in Liverpool, and deserves greater support and encouragement than it at present gets. To the poor man it is essential that his teeth should be well attended to ; to you personally, and to your colleagues, who so kindly give gratuitous services, all thanks are due.

“ Had it been in my power to attend the Annual Meeting, I would have pleaded for outside help to enable us to obtain more suitable premises for the largely-increasing number of cases.

“ Believe me, faithfully,

“ W. J. Newman, Esq.”

“ RICHARD F. STEBLE, President.”

And now, Gentlemen, I have to move “ That the best thanks of this Meeting be accorded to His Worship the Mayor, for his kindness in presiding on this occasion.” (Applause.) We must all agree in thinking that our Chief Magistrate has been very kind in his remarks towards our Institution, and we must cordially recognise the assistance he has rendered to the charitable institutions of the town generally. As one of the officers of the Dental Hospital, I thank him for his kindness in presiding here to-day. (Applause.)

Mr. Councillor Campbell : I have great pleasure in seconding this resolution, and also in having the opportunity of recognising His Worship's kindness in connection with the charitable institutions of the town generally.

The motion was carried by acclamation.

The Mayor : Gentlemen, I thank you very much for the hearty manner in which you have passed the resolution. I assure you it gives me great pleasure to preside at all meetings of this kind. (Applause.)

The proceedings then terminated.

Annual Dinner of the Dental Hospital of London.

HELD AT ST. JAMES'S HALL, MARCH 16, 1876.

W. SCOVELL SAVORY, Esq., F.R.S., in the Chair.

About 150 gentlemen, from all parts of England, Scotland, and Ireland, sat down to an excellent dinner, at the conclusion of which

The CHAIRMAN, on rising to propose the first toast, said :—Gentlemen, we will drink first of all, of course, to the health of the Queen and the Royal Family. I will only say that of all classes of her Majesty's subjects we, who are especially concerned in the work done

at hospitals and are necessarily more familiar than some others with pain and suffering in their endless forms, that we especially should drink with enthusiasm to the Queen and Royal Family; for never before, I will venture to say, in this world's history has monarch so taken to heart the sorrows and trials of her people (cheers). She and the Prince and other of her children know, I should think, more about hospitals, what they are and what they do, than ever queen, or king, or prince before; and the future historian of England, in recording the glories of the reign of Victoria, can have no fairer tale to tell than this (cheers).

The CHAIRMAN.—Gentlemen, in proposing the toast of the evening I am assured of that which all speakers must covet, the entire sympathy of those whom I have the honour to address. When I name the Dental Hospital and its Medical School, and invite you to drink their continued and increasing prosperity, I am assured of an unanimous and hearty response. The establishment of a Dental Hospital and School is an accomplished fact; there is now no need to give reasons for their existence. They have long enough been obvious to all with eyes to see, and every year a fuller answer is given to the question in the good work done. Observe too, I pray you, this further fact, that the good done by the Hospital is by no means limited to those who work there, and to the poor who come to it for help. It tells to all the hospitals in England how such work as yours may and can be done, and if they remain insensible to the lessons it teaches, it will sooner or later shame them into better work. The time will come when, through your influence, they will not dare to have teeth drawn in a slovenly manner, or, indeed, to have them drawn at all if they can be saved for use (cheers). I do not care from this place to put forth any appeal which is based on selfish grounds, or I think it would be easy to show how all classes, even the highest, must be deeply interested in the progress of this as of all institutions whose aim is the relief of suffering or the increase of the comforts of life. Here are those advances made and those discoveries worked out, of the benefit of which there must be very few who will never stand in need. I may say, indeed, to many of those around me, as you would wish in years to come to enjoy good dinners as you have done this evening, have an eye to the future progress of the Dental Hospital. I cannot sit down without offering my most hearty congratulation to those to whom is entrusted the education of the students in Dental Surgery. You succeed, of course, because you have been so energetic, and there is so much wisdom in your energy. You recognise the fact and act upon it, that the only valid steps that can be taken for the advancement of a profession is through the education of its members. Charters and the like may be, to some extent, the outward sign of progress, may be in some measure the record that progress has been made, but after all the real state and power of a profession must be determined by the character and conduct of its members, by their claim to professional and public confidence. You see this clearly, and you advance accordingly. May I tell you with what pleasure I lately listened to the proposal of my old friend your Dean, that there should be a preliminary examination for all students of Dental, as well as for those of general surgery (cheers). I remember how Mr. Hamilton Cartwright, at the distribution of prizes the year before last, pointed out this want, and now it is de-

cided that the want shall be supplied. There may be some who will think this hard, and others who may declare loudly that it cannot be necessary; but surely such objections are founded upon very shallow views of what our students are and what they ought to be. If a man nowadays is to get a decent living amongst us, he must speak and sometimes write, at least, one language which he calls his own (laughter). He must spell too, if he is to take part now in one of our great national pastimes (laughter). Then, is it not well that these things which he must do somehow, he should do with tolerable accuracy? Moreover, who that knows anything of the subject of education can doubt that, by some previous training in the knowledge of our schools, a man is far better equipped to grapple with the difficulties of those studies which are strictly professional? Are these propositions beyond question? Then have you done right in the latest step you have taken? There is no fear of the practicability of your new scheme. Macaulay has, I think, said somewhere that genius obeys the same law as cotton, the supply being adapted to the demand. I do not know whether we are all prepared to go the length of endorsing this statement; but I know well that in matters of education and examination within certain limits the supply is equivalent to the demand; that what you continue to ask for up to a certain point you will get, and, as a rule, very little, if any, more (laughter). Yes, gentlemen, we will drink to this toast, not with empty sound, but in a spirit of determination that the great work so successfully set in motion shall be faithfully carried on. You have not only the experience of age in the example of kindred institutions to guide you, and you have shown how ready you are rightly to avail yourselves of this; but you have an energy of youth all your own, and, for the present time at least, unity of purpose. By-and-by, as you move onwards, differences and divisions must inevitably arise, but pray pull together as long as you can (cheers). I know well that all who sit at public dinners are not hearty supporters of the cause they celebrate; but here, as I have said, I have no misgiving. Look around me where I will I recognise on all sides well-known faces, men earnest and steadfast in the cause, men not untried, but who have shown by their own career what they can do if they will. The men who have placed themselves in the foremost rank of their profession are with us to-night. They and others have made the Hospital thus far conspicuously successful, and having put their hand to the work they are not the men to turn back from it now (cheers). I give you "The Dental Hospital and School of London," and with it the health of Mr. Thomas Hills.

Mr. HILLS.—Mr. Chairman and gentlemen, when I came into this room to-night I had no idea that I should be called upon to return thanks for the Committee of Management, the department to which I belong. The Chairman has spoken of the great success which has attended the Dental Hospital. I am pleased to say that from its commencement I have been on the Committee, and I have had great pleasure in belonging to it. I have always found the Committee determined to work with energy; indeed, if it were not so we should not be in the position we now occupy. But do not fancy that because we are in a good position we shall always go on in the same way without that energy; and, indeed, we really require all your help. I am very sorry that the gentleman who should have returned thanks this evening,

Mr. Campbell de Morgan, is not amongst us. A more worthy man, one who has devoted himself more successfully to the Hospital, you could not find. I am sorry that he is not well enough to be present, but I trust it will not be long before he is amongst us again. Gentlemen, we are not here to-night to ask you for money, not that we have got too much (laughter), in fact, I do not mind whispering to you that we want a little more. We do not ask you for any now, but if you have any kind friends who would like to subscribe to the Hospital do not forget to mention the matter to them. Once more let me thank you on behalf of the Committee of Management (cheers).

The DEAN (who was loudly called for) said :—Gentlemen, in obedience to your wishes, though quite out of rule, I have the great privilege of returning thanks for the School this evening. And the more sensible I am of the honour of representing my colleagues, the more conscious I am of my unworthiness to do so; in fact, I hardly know by what right I may claim to represent our School at all. I can scarcely lay claim to be one of the medical officers, and although a Dean, my position is not exactly a clerical one. So that I must apologise to my colleagues for my imperfect representation of them. But after the very eloquent speech of our Chairman I feel I need say little with regard to the course we have taken. You will remember that last year a distinguished surgeon and graceful speaker—Mr. Le Gros Clark—alluded to the connection between the College of Surgeons and the Dental profession, and to the advantages which our body derived from that connection. The institution of the preliminary examination for Dental pupils will, I believe, strengthen that bond, and will induce and enable many more of our students to avail themselves of the advantages of full membership in addition to the Dental diploma (cheers). But, gentlemen, I should like to say one thing: let us always remember that it is the possession of our own special diploma which attests our capability for the practice of Dental surgery (cheers). By all means, let those who can afford the time and cost avail themselves of the opportunity of taking both diplomas. They will never regret it, for they will thus during their pupilage acquire broad views of the science of surgery, and also secure greater privileges than the special diploma alone confers. But those who originated the educational movement twenty years ago—and the majority of whom were members of the College—distinctly advocated the principle that a strictly medical or surgical diploma does not, of itself, prove that its possessor is familiar with the details of the practice of Dental surgery. And surgeons of the highest eminence and greatest distinction always admit their incapacity for Dental practice. In returning my sincere thanks for the kind way in which you have called for me this evening, when we are met together to celebrate our Dental School, let me, therefore, most earnestly urge the claims of that diploma, which it has been one of the chief objects of our School to elevate, to the regard and respect of all the members of the Dental profession (cheers).

Mr. UNDERWOOD.—I rise as the exponent of the feeling not only of the Dental Hospital students, but I believe of a large proportion, if not the whole, of the Dental profession in order to propose the toast which has been confided to me. The name of the President of the College of Surgeons, apart from his professional dignity and status,

will be sufficient to command the respect of every member of the Dental profession. In referring, then, to the present President of the College of Surgeons, I would appeal to my brethren whether they have ever in their wildest dreams of what their success might be, expected to receive such a kindly and hearty welcome as they received from that gentleman, distinguished as he is, not only by his professional position, but by his private virtues. I am quite sure that my brethren felt it a very high honour when Sir James Paget undertook the distribution of prizes at the commencement of our last session. I wish I had the power to put before you, gentlemen, what our real feeling is towards Sir James Paget. It is, I can assure you, a feeling (I am not using the word extravagantly) of a most affectionate character. The principles that he enunciated and his own professional career hold out a bright and shining light to all our young students, which I trust they will follow. I have also to propose the health of the Board of Examiners. Whatever their duties may be (and in certain cases I believe they are painful to themselves) they are actuated by a sense of the duty imposed upon them, and I am perfectly certain that, whatever the result of their labours may be, they have honestly done their duty (hear, hear). There is a great deal in honesty of purpose; there is a vast amount of meaning in that term; and our diplomas would not be worth the paper upon which they were written if we did not feel perfectly sure that they were given after an honest and independent test to those who deserve them. Such being the case, I may say that you, gentlemen, the Board of Examiners, have undoubtedly the hearty good wishes of all the members of the Dental profession. Our desire is that you may long remain in your positions, and so stringently apply the rules of your examinations, that we may feel that none but those who are competent will obtain this diploma. Sir, the toast that has been placed in my hands is a somewhat large one, for it also includes the visitors. As regards the visitors on this occasion, all I can say is that I do not believe that we should have had them at this table unless they had felt that those whose guests they are were men actuated by an earnest purpose and had a certain end in view. How far that end may be accomplished, how far our earliest visions may be realised, we cannot tell; but I am sure that you, our visitors, have come here believing that the Dental profession have an end in view and a determination in view, and that they mean to hold their diploma as a test of their fitness to meet in professional consultation, and that they will so conduct their practice as to benefit the public at large. I now call upon you to drink the health of the President of the College of Surgeons (Sir James Paget), the Board of Examiners, and the Visitors (cheers).

Mr. LE GROS CLARK.—I have much pleasure in replying to this toast. It is a triple toast, and I hope I shall not succumb to the weight of it. I will not pretend to any remarkable difficulty or diffidence in replying; for the way in which the name of Sir James Paget was received, as it always is received in public, satisfies me that you fully appreciate his worth, position, and abilities. The way in which you responded to the mention of the College of Surgeons, when your worthy Dean was speaking, satisfied me that you are gratified, may I venture to say proud? of your connection with that body. And lastly, as I believe I am addressing a body of gentlemen who, as far as they

desire it, possess our diploma, I may reasonably conclude that we are as a Court of Examiners tolerably popular with you (cheers). My experience in this capacity, which has extended now over several years, has taught me that we are very differently regarded by three classes of gentlemen. First, there are those young gentlemen who are aspirants for our diploma, and who regard us with a certain amount of awe, mingled I trust with respect. Then there is a second class who are altogether perverse in their opinion of us—gentlemen who, to use the technical phraseology, have been “referred to their studies for six months.” These gentlemen always find that there is something radically wrong and defective in our system of examination (laughter); or they visit their misfortunes upon the head of the unfortunate examiner, who is either incapable of performing his task properly, or has been vindictive or negligent or unjust in his mode of examining, or at any rate has failed to appreciate their great worth (laughter). Now, sir, I am very much pleased to find that the remarks which have been made by Mr. Underwood were so thoroughly appreciated by you, and I trust that you all feel from the heart that the principles upon which we act are those of simple justice and desire to do our duty without regard or favour to any. The last class, to which I have already referred, those who possess our diploma, are willing to regard us as a popular and well-regulated body. After the eloquent remarks from the chair it is unnecessary for me to dilate upon the importance of your branch of the profession, I will not call it the Dental profession, I prefer to call it your branch of the Surgical profession (hear, hear). If the ills to which flesh is heir, and to which you have to minister, do not commence with birth, they at any rate attack us before we leave the cradle, or (to use the more fashionable term) the basinet; and as we attain maturity how much would the prospects of many of both sexes be marred but for the attention which you give them, by feeble imperfect articulation, by disfigurement of face, and even by impaired digestion. And lastly, as we become edentate, when we arrive at that period when the grindstones of the mill cease, or rather when there is no grindstone to grind (laughter), then life is prolonged and rendered comfortable by your services. Now where this is the case, and appreciated as it is by the general public, I need not further enforce what has been referred to by your Dean, the importance of your connection with general surgery. It is by this connection that your art, I will not call it a mechanical art, your mechanism and dexterity in extracting or stopping teeth, has been raised into the position of a scientific art. I am sure you will receive with gratification what I say in reference to the mode in which the candidates have acquitted themselves during the past year. Though there have been exceptions—exceptions which I think our Chairman must have had in his mind when he made some remarks upon the subject of general education—as a rule the candidates for the Dental diploma have acquitted themselves creditably and to our satisfaction. I am particularly pleased to say this in the presence of your Dean, who takes an almost paternal interest in all the candidates. Before I sit down allow me to add one remark: that in order to draw the bond of association between us and you more closely, a recommendation of the Dental Board has been accepted, and will be acted upon by the Council of the College, that in future any aspirants to the office of teaching Dental surgery must, in addition to other qualifica-

cations, be possessed of the Dental diploma of the College of Surgeons (cheers). I thank you for the patience with which you have listened to me, and regret that you have not had the pleasure of listening to the eloquence of the present President of the College.

Mr. COLEMAN.—Among the liberal professions that adorn this country there is no one that has received less of public reward than the medical profession. When this has been reported in high quarters, I am given to understand that the answer has been returned, "Gentlemen, the work you do is so grand, so valuable, so elevating, that you have within yourselves the highest reward, namely, the reward of your own consciences." And I quite agree with that, for pleasant as a high-sounding title may be, the best reward that an honest man can have is the reward of his own conscience. Still, gentlemen, we have rewards within our own body, and amongst the highest of these rewards are the high positions that men can take in our benevolent and medical societies—such societies as the Medico-Chirurgical, the Pathological, the Medical, the Clinical, and last of all, and eclipsing all in regard to name, the Odontological Society of Great Britain. Gentlemen, at the present time we have presiding over us an individual who, by sheer work, industry, and perseverance, has attained that high office, and is carrying out that high position with the greatest credit to himself. I beg to propose the health of Mr. Charles Vasey, President of the Odontological Society (cheers).

Mr. VASEY.—Gentlemen, in the name of the Odontological Society of Great Britain I beg to return to you my most sincere thanks for the hearty way in which you have responded to this toast so eloquently proposed by Mr. Coleman. At the foundation of the Society we had in our ranks some very remarkable men. There was one who by his professional ability gained a wide-spread reputation. He was the man who raised the character of Dentist to a far greater pre-eminence than it ever had reached before. He was a lover and a patron of art, his sympathies and aspirations were all lofty and elevating, and he gained or deserved among his professional brethren the name of King of Dentists. I refer to the late Samuel Cartwright. We had another eminent in all the social qualities and a great administrator; one who devoted himself to the profession and took the greatest interest in everything that advanced or elevated it, I refer to the late Arnold Rogers. A third, by head and heart eminently great, commanding our admiration, love, and esteem, I am heartily thankful to state we still have amongst us, and I pray sincerely that he may long survive to adorn the profession for which he has done so much. I allude to John Tomes (loud cheers). Another of whom, being present on this occasion, I will only say that the name of our Society originated with, is Mr. Edwin Saunders. To the united wisdom of these great men, assisted by the counsel of other luminaries, we are indebted for the foundation of our Society, and I am convinced that no foundation could have been more noble or more disinterested than that was. It was founded for the diffusion of knowledge and the extension of friendly intercourse among the members of our profession. I am happy to say that from the foundation of the Society until now it has met with continued prosperity. You will be pleased to hear, Mr. Chairman, that we are at present in a very favourable position indeed. Our Library becomes more extensive every year, our Museum more valuable, the list of our members more numerous,

and the balance at our bankers greater. There was only one thing that for years and years we never had, and that we have lately come into—a little opposition (cheers and laughter). Since you have elected me as your President it has been communicated to me that the Society is a very conservative one, that it places far too great a value on qualifications and examinations, and that it is a hindrance to many popular movements. But for its being in the way we might have a very popular, wide-spread organisation, that would take under its fostering wings everybody, in fact, take everybody in (laughter). I have also heard that we are lax in the extreme; that we accept any one as a member; and our doors are open to anyone who comes and knocks with an introductory subscription in his hand. I am sure that you know better, and I think that these extremes of positive and negative opinions are a proof that we stand in a thoroughly sound condition, and that we have nothing whatever to fear for the future. Before sitting down I will take the opportunity of departing a little from the programme. For this pleasant meeting we are largely indebted to the labours of two gentlemen (hear, hear). Having been on the committee I know how much they have devoted themselves to the work on this occasion. I will not trespass on your time by asking them to make speeches, but I will request you to give a round of applause to those to whom we are so greatly indebted—Mr. Merson and Mr. Parkinson, jun. (cheers).

Sir CHARLES MACGREGOR having proposed the health of Mr. Savory, The CHAIRMAN replied.—Gentlemen, I should not have ventured to occupy the chair this evening had I not the fullest confidence in your unbounded indulgence. Indeed, of this you have given me such proof I shall never forget it. I thank you very heartily for your great kindness in placing me in this chair, for your patience and forbearance, and to crown all, for the generous words in which Sir Charles Macgregor has proposed my health, and for your cordial acceptance of it. I should make a sorry return for all this if I spoke at any length now, but I cannot conclude without expressing my deep personal regret at the absence of Mr. De Morgan. I am sure you will all agree with me that this Institution owes so much to him, is so largely indebted to his admirable judgment, his administrative ability, his high character and professional rank, that his absence, even for this evening, cannot be regarded otherwise than as a great loss. We will drink to his health, and hope that for the sake of this Institution he will very soon be in his place again (cheers).

Mr. CHARLES TOMES.—I had not the smallest expectation of making a speech this evening, but I have been asked since dinner to propose the health of the Medical Schools of Great Britain. I propose it with great pleasure as being myself a teacher in our Dental Hospital and School, a school which numerically can compare favourably with a large number of medical schools in Great Britain; and I rise with the more pleasure, because it gives me the opportunity of saying one or two words upon a question which has lately agitated our minds a great deal. A proposition has been brought before the profession generally for the formation of a somewhat exclusive party among Dental practitioners. Thus far, to the best of my belief, that body has not constituted itself, and I thoroughly hope it may never constitute itself (cheers). As things now are, our school occupies an intelligible position. Certain specialities have arisen in connection with medicine which can

he better taught at a special than at a general school. Those who wish to practise ophthalmic surgery go rightly and naturally to Moorfields to learn it, and those who wish to practise Dental surgery go naturally and rightly to our Dental Hospital in Leicester Square (hear, hear). It is the wish of those most earnest for the advancement of the Dental profession that it may be possible, at some future time, to adopt some common mode of admission to its ranks, that a Dentist may enter the medical profession through a common portal, or some modification of the common-portal scheme, while, at the same time, he shall have obtained that special education which fits him to practise as a Dentist. In the meantime, for my own part, I shall endeavour to get what position I can by steadfastly working as a teacher in our Dental School, which is intimately and necessarily connected with other medical schools; and so long as I retain that habit of mind which I have inherited from a father, who stands higher in your esteem than I dare hope ever to stand, I shall not seek position by uniting myself with any limited clique or party which cannot fairly represent the great body of Dentists in the kingdom. I should hardly have spoken thus had it not been that illness has prevented my father from being here to-night. I feel that, as a young man, I am, perhaps, presuming in speaking so strongly, but as my father is not here to speak for himself, I may venture to say, knowing his opinions better than most people present, that you may take my words as in a measure representing what he thinks. I have only now to propose the health of the Medical Schools of London, coupled with the name of Mr. Langton, and to add that I regard the Dental School as standing in the same relation to them as that in which the Moorfields School stands in regard to ophthalmic science; and while it is unlikely that any general hospital can compete with such an institution as Moorfields in ophthalmic science, it is, I believe, impossible that any general hospital can advantageously undertake the teaching of Dental surgery in all its minutiae.

Mr. LANGTON then returned thanks.

The company then separated.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

The New Dental Society.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

DEAR SIR,—I enclose herewith copies of the correspondence which has passed between myself and the secretary of the new association, which I shall feel obliged by your publishing, inasmuch as I have heard from one or two sources that my father and myself are supposed to have been participators in a movement which we in all respects disapprove.

I am, yours faithfully,

CHARLES S. TOMES.

37 Cavendish-square, W., March 30, 1876.

ASSOCIATION OF LEGALLY-QUALIFIED DENTAL SURGEONS,
Medical Society's Rooms, Chandos-street, W.,
March 23rd.

DEAR SIR,—I am requested to inform you that at a Meeting of the above Association, held on the 14th instant, it was proposed by Mr. S. H. Cartwright, and seconded by Mr. S. Cartwright, that you be invited to become an original Member of the same. I herewith enclose you a list of the objects for which the Association has been founded, and shall esteem it a favour if you will kindly inform me, not later than the 31st instant, whether it is your pleasure to have your name enrolled as a Member of the Association?

Yours faithfully,

To C. S. Tomes, Esq.

S. HAMILTON CARTWRIGHT.

RESOLUTIONS.

1. That the new Society be called "The Association of Dental Surgeons, Legally Qualified."

2. That it is founded to promote objects not contemplated by any existing Dental Society.

3. That the chief of its objects shall be :

a. The establishment of an improved Code of Ethics.

β. The endeavour to encourage a higher Educational Standard, both general and professional, for those who may hereafter practice the special branch of Dental Surgery.

γ. The furtherance of modes of practice compatible only with the highest professional status.

4. That in order to carry out the above objects, the Association shall in its commencement, meet at least six times in the course of the year.

5. That the business of the Association be conducted by a Chairman, a Vice-Chairman, a Treasurer, a Secretary, and a Committee of Members.

6. That all qualified Medical Practitioners be eligible for Membership.

7. That the Society shall also consist of Honorary Members.

The following Gentlemen compose the Committee and Office-Bearers :

Chairman—Samuel Cartwright, F.R.C.S.

Vice-Chairman—S. J. A. Salter, M.B. Lond., F.R.S.

Council—H. Craigie, M.R.C.S.; T. Edgelow, M.R.C.S., L.R.C.P.;
D. Napier, M.R.C.S.

Treasurer—A. Coleman, F.R.C.S., L.R.C.P.

Hon. Secretary—S. Hamilton Cartwright, M.R.C.S.

37 CAVENDISH SQUARE, W.,
March 30th.

DEAR SIR,—In reply to your note, dated March 23rd, I write to say that I have no wish to become a Member of the new Association.

And in declining the proffered compliment, I feel that I should give some at least of the grounds upon which my decision is based.

Its objects are said to be—

1. "The establishment of an improved code of ethics." Personally, I do not believe that a high standard of thought and conduct is

capable of being inculcated in the minds of those who have it not to begin with ; while those who have it will gain little by its codification.

2. "The endeavour to encourage a higher educational standard, both general and professional, for those who may hereafter practice the special branch of Dental surgery."

I, in common with many others, believed that this work had been inaugurated, and was still being carried on, as witness the recent requirements of the College of Surgeons in the matter of an examination to test preliminary education, prior to students being admitted to the L.D.S.

But the work was commenced by, and is still being furthered by, men whose names I do not see among the office-bearers of your society, and whose names I do find upon the roll of the Odontological Society, and I prefer to leave the work in their tried and trusted hands, working upon a liberal basis, rather than confide it to a body, the list of office-bearers of which includes the names of some at least who have stood apart and have not at all times ungrudgingly gone with their comrades in this matter.

3. "The furtherance of modes of practice compatible only with the highest professional status."

To what in particular this alludes I fail to see ; "modes of practice" which are worth anything are very likely to take care of themselves, and to stand upon their own merits, rather than upon the dicta of an association.

In its declaration of its objects, your association has, to my mind, failed to establish its *raison d'être*, and I should decline to join it on the ground that I hope to employ my time, if not more usefully, at all events, more to my taste.

Farther than this, there appear to me to be other grave objections to joining the association.

Whatever any one may say to the contrary, the L.D.S. diploma is the only one which indicates that the holder has received an education and an examination in the matters appertaining to our specialty. And, desirable as may be the extra year of hospital study which the M.R.C.S. implies, how much of general surgery do we keep up, and how far are we to be fairly entitled "competent surgeons," after ten years have elapsed from our having acquired the diploma?

An association which fixes its qualification for membership in a degree other than the L.D.S., and purposes to be going "to further modes of practice compatible only with the highest professional status," &c., is in its very existence a slight to the L.D.S., and I observe that, although this degree is held by at all events some of your office-bearers, these letters are not appended to one single name.

Before I could join your Association, putting all other questions aside, my own self-respect would require me to resign the chair and its emoluments which I hold at the Dental Hospital, because that is a school directly concerned in the training of students for the L.D.S., and not for the M.R.C.S. And were I to displace the L.D.S. into a secondary position as a qualification for the Dentist, then, and not till then, I conceive that it would be consistent for me to endeavour to displace the Dental Hospital by the establishment of complete Dental schools at every general hospital ; and this would be a natural outcome of joining your association.

So far, I have given only my grounds for personally declining to become an associate; a broader question opens itself up, however, in the influence for evil which the step you have taken may have.

Just now there is an extensive movement in the body of the profession, which has for its purpose progress in some form or another. The formation of a society proclaiming for itself a sort of superiority, instead of waiting till other people acknowledge its merits, must produce ill-feeling, and has, indeed, already done so.

In the face of the opposition which its establishment provoked; in the face of the remonstrances of many whose judgment and motives are above suspicion; in the face of the danger of a split, such as the Dental profession once had to struggle through, the promoters of the association might have gained in dignity by unselfishly withdrawing their scheme. Prejudiced I may be, but I for one cannot see that the results of the association, if there be any results, will be worthy ones. Its objects, if gained, surely are selfish objects, and would benefit, not the Dental profession at large, but those alone who presumably stand least in need of being benefited.—I am, yours faithfully,

CHARLES S. TOMES, M.A., M.R.C.S., L.D.S.,
Lecturer on Dental Anatomy and Physiology at the
Dental Hospital of London.

To S. Hamilton Cartwright, Esq.

Mr. George Ward.

TO THE EDITOR OF THE "MONTHLY REVIEW OF DENTAL SURGERY."

SIR,—I do not know that I should have returned to the subject of the inquiry of "L.D.S." in last month's "MONTHLY REVIEW," but for certain reasons. One is, is it usual for editors to privately show the letters of correspondents before the letter appears in print? Next, my annoyance, if any, was because I was attacked by one signing under initials. Even now I know not my enemy, though he has expressed regret; that is something. Now, sir, I have been many years in practice as a "*Surgeon Dentist*," which alone has ever appeared on my cards and circulars, and as I do not *entirely* and *contemptuously* repudiate the good opinion of my professional brethren, I would have frankly explained what gave rise to the inquiry of "L.D.S." relative to the mistake he has made. But as I do not choose to explain to initials, I refrain. The characteristics of a man show themselves in everything that he does, so kindly oblige me by inserting this letter to show "L.D.S." that the first step towards being a gentleman consists in not being ashamed of his own name.—I remain, Mr. Editor, yours respectfully,

188 Oxford-street, March 17th, 1876.

GEORGE WARD.

New Inventions.

WALKER'S SELF-REGULATING VULCANIZERS.

We have much pleasure in directing the attention of the profession to this now well-known vulcanizer.

The principle on which this invention is based is, that any given temperature of steam has a corresponding pressure, and as a pressure of 100 lbs. per square inch represents the best temperature for the

process of vulcanizing, it is only necessary to keep the pressure at that point to ensure success.

One defect in the ordinary vulcanizers arises from the fact that with a thermometer resting in a recess containing mercury, fluctuations in the internal temperature of the boiler are not instantaneously shown, owing to the heat having to pass from the inside of the boiler, through the iron to the mercury, and from the mercury to the thermometer, the result being that the temperature may rise or fall considerably, without the thermometer giving any indication, thereby causing the vulcanite piece to be porous and otherwise faulty.

In order to test this point, Messrs. Walker and Son tried a series of experiments with a boiler in which the recess for the thermometer was at the top of the lid.

The first result was that the thermometer registered 40 degrees less than the true internal temperature, although the heat was kept at the same point for some time. After this it was not surprising to find that it was possible to lower the temperature 50 degrees, and raise it again to the high point without the thermometer registering more than five degrees of variation.

In Walker's vulcanizer this fault is guarded against in two ways, firstly, the pressure of steam acting directly on the flow of gas, any variation in the internal temperature is checked instantaneously, by an alteration in the flame of the burner; and secondly, the pressure gauge will register with much more sensitiveness than a thermometer.

A vulcanizer thus fitted is clearly more reliable than one with the ordinary thermometer, and we think it will be well for the profession to endeavour to ascertain how far failures in vulcanite plates are due to defective structure in the boilers.

Obituary.

MR. CAMPBELL DE MORGAN, F.R.S., F.R.C.S.

It is with deep sorrow that we have to record the death of Mr. Campbell De Morgan, who, after a short illness, sank from pneumonia on Tuesday. Differing entirely from ordinary practitioners, there are few men whom the profession could have better spared. In his student days he showed great capacity, although he seldom exerted it, and such was his disposition in after years. Many thought him potentially equal to his brother, but he did not possess the same energy or industry, and therefore never attained the same distinguished position. He was the author of some excellent papers on cancer and tumours, the study of which subjects was facilitated by his connection with the special department of the Middlesex Hospital. He was elected a Fellow of the Royal Society, and made some interesting contributions to its transactions. As a surgeon he was thoughtful and painstaking, and an expert operator. He was also a ready and logical speaker, and his lectures were remarkable for their philosophical simplicity. Naturally of a contemplative disposition, and of artistic tastes, he cared not to enter the lists in search of fame or gain. His reputation, if limited, will always stand very high with those who knew him well; and, as the type of a chivalrous gentleman, his memory ought to be embalmed in this competitive age, when not unfrequently practitioners appear in the character of struggling tradesmen.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS:—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM FEBRUARY 1ST TO FEBRUARY 29TH, 1876.

Extractions.	Children under 14	-	-	-	-	-	310
	Adults	-	-	-	-	-	502
Under Nitrous Oxide	-	-	-	-	-	-	228
Gold Stoppings	-	-	-	-	-	-	218
White Foil ditto	-	-	-	-	-	-	14
Plastic ditto	-	-	-	-	-	-	273
Irregularities of the Teeth treated surgically and mechanically	-	-	-	-	-	-	39
Miscellaneous Cases	-	-	-	-	-	-	201
Advice Cases	-	-	-	-	-	-	119

Total - - 1904

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received:—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE
Monthly Review
 OF
DENTAL SURGERY.

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From

JOHN WOOLCOTT, Esq.,

Fellow of the Royal College of Surgeons, England,

FOUNDER OF THE KENT COUNTY OPHTHALMIC HOSPITAL.

"I enclose a cheque for your account, and I take this opportunity to testify concerning the excellent quality of your dry "SPECIALITE" SHERRY. I have been a great sufferer with gout, and for a long time I have been in search of a light Sherry, free from acid, which I might take and feel that it was doing me good instead of harm, and such I have found your wine, and have recommended it extensively to my patients in consequence.

"Maitland House, Parade, Tunbridge Wells."

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THE MONTHLY REVIEW OF DENTAL SURGERY.

No. XII.

MAY, 1876.

VOL. IV.

Divided Councils.

The present number of the MONTHLY REVIEW OF DENTAL SURGERY will complete the Fourth Volume, and during the last year of the Review's existence there has been no lack of material for discussion; since the days when Dentists first thought it well that they should combine together for mutual benefit and scientific advancement, we have had no period during which political feeling has run so high and party spirit has become so strong. On many accounts this is to be deplored; the Dental Profession cannot at the present time afford to be divided in its Councils, and yet this is a result that will inevitably ensue if those who have assumed to themselves the task of *elevating* the profession persist in their endeavour to isolate themselves from the Dental Licentiates. The members of the Association of Surgeons practising Dentistry have a perfect right to form themselves into a Society if they so please; they are clearly at liberty to draw up whatever rules they may choose for the government of their own body; and so far as they can, they may manifestly introduce amongst themselves such reforms as they consider desirable. The case is totally different, however, when they propose to supply a code of

ethics for those whom they will not recognise as eligible for membership in their new Society.

If the number of Surgeons practising dentistry had been equal to the number of Dental Licentiates, we should be able to see some show of reason in their attempting to take to themselves the ethical guidance of the profession. Representing, however, as they do only about one-seventh of the properly qualified Practitioners of Dental Surgery, we are at a loss to understand how they can justify their position of self-endowed superiority.

Apart from the question of a greater or less degree of educational capability, we have the startling fact that they practically ignore the only dental qualification to be obtained in this country, and further endeavour to depreciate the value of the Dental Licence by the supposition that they alone can provide their *confrères* with that unwritten law of moral rectitude which may fairly be taken as the guiding principle of all truly professional men.

That the Dental Profession needs reform in many respects no one will for a moment deny, but it must be brought about by the joint action of every section of our community, and not by the egotism of a select few. In their zeal to provide a code of ethics, the Association of Surgeons practising Dentistry have done worse than commit a great indiscretion—they have done their best—though, we trust, unwittingly—to hinder the progress of Dental reform.

So long as the members of the new Society confine their labours to the discussion of matters of scientific interest, no one will have any just cause of complaint against them; but when, however, they ignore their professional colleagues, for whom at the same time they would fain legislate, they must not feel surprised to find themselves the subjects of harsh criticism and undisguised mistrust.

The Month.

DEATHS DURING THE PAST MONTH.

We regret to announce the death of Mr. G. F. Fox, of Gloucester, at the early age of fifty-four; and of Mr. Thomas Hankins, of Queen Anne-street, in his forty-second year. Mr. Hankins' death was painfully sudden, and arose from the giving way of a small aneurismal tumour.

DENTAL REFORM.

Mr. Wormald, of Stockport, summoned a meeting at Manchester, on May 6th, when the following resolution was to be brought forward:—

RESOLVED:—"That with a view to unite the profession and facilitate the attainment of Parliamentary protection, upon the basis suggested at the Manchester Meeting, in August last,—

"This Meeting respectfully recommends the Executive Committee to embody in their Scheme of Dental Reform a re-opening of the L.D.S. examination to all existing practitioners, without curriculum, and with a form of examination modified according to the number of years candidates may have been in practice."

We have not received any report of the Meeting.

DENTAL ANÆSTHETICS AND HEART DISEASE.

We commend to the notice of our readers a correspondence on the above subject that we reprint from the *Lancet* at another part of the REVIEW.

THE ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

The next Monthly Meeting of the Society will take place on Monday, June 12th, instead of the 5th of the month.

DENS SAP.

In a sale catalogue of autographs there is one from Mrs. Piozzi, perhaps better known as Dr. Johnson's "Mrs. Thrale," in which she advises the Rev. Mr. Davies, concerning Salusbury, her nephew. "Meanwhile, let Parkinson look to his month directly, for it is so constructed he shows his teeth every time he speaks, and there are those who regard *them* more than the *words*, you know, which will *at any rate* come with a better grace from between two clean rows of fencibles in fair uniform, than from an ill-formed and masked battery of black fascines. Take care of his mouth, therefore, and let nothing odious either go in or come out."

DENTISTS.—"There are dentists and dentists." Outside the legal and duly-qualified body of dentists there is a body of irregular practitioners, who, both in London and the pro-

vinces, drive a lucrative trade. The "qualified" dentists are "Licentiates in dental surgery of the Royal College of Surgeons," having passed an examining board, consisting of six Fellows of the College who are surgeons, and six who are dental surgeons. The 'Medical Directory' contains the list of all dental surgeons thus qualified. Among the unqualified practitioners there are, of course, men of very various characters. When we say unqualified, we refer merely to the recently introduced legal qualification. There are still some educated and respectable dentists who practise, as they always have done, without diploma; just as there are clever schoolmasters without University training, or without connection with the College of Preceptors. It is their own fault if young dentists, by omitting to get a diploma, are classed with the quacks. The following incident known to us may serve as a warning against some of those who prey upon the public:—General ———, an old Indian, and a wealthy man, has a stick with a gold top, which he often shows, with the question, "What do you think that bit of gold cost?" After silence, or a wide guess: "Why, sir, it cost me a hundred guineas!" And then he tells how, on seeing an advertisement in the *Times*, he was attracted by its liberal promises, and pleased with its frankness of offering "advice gratis," and so on. His case, he was told, was one of extreme difficulty, but might, with great skill and care, be managed. Ignorant of the ways of these gentry, the General submitted himself meekly to the operator, who managed him as rich patients are usually managed. A duplicate set was prepared, which the General was told was the usual practice, when not otherwise specified. The General began to think there was "sharp practice," when the dentist stated that credit was never given, but that payment must be made before the teeth were taken away. On writing the cheque for 100*l.*, the watchful trader said his charge was a hundred guineas, and the General had to pay that sum. After some trial, the teeth were found utterly unserviceable, causing intense misery; but rather than have anything more to do with the advertising dentist, the General went to a qualified practitioner. Being properly fitted by him, the gold of the old sets was melted to make the top of the stick, which he displays good-humouredly as a monument of his own folly, as well as a warning to others.—*Leisure Hour.*

On the Microscopical Structure of Fossil Teeth from the Northumberland True Coal Measures.

By W. J. BARKAS, M.R.C.S.E., L.R.C.P. Lond.

CHAPTER XXI.

(Continued from page 484.)

Genus.—*Strepsodus* (Huxley).

The bone tissue of the jaw is composed of homogeneous tissue freely permeated by large vascular canals which branch and anastomose in all directions, causing the structure to appear very porous when examined in a vertical section; this is more especially the case with the alveolar osseous tissue; in the lower part of the jaw the tissue preponderates over the canals, and therefore appears denser. Surrounding most of the canals are concentric rings of dense structureless-looking tissue, and in or between those laminae are arranged numerous lacunae, which give off a great number of rather large canaliculi, these radiating tubes ramify in the homogeneous lamellae, and anastomose there with the canaliculi of contiguous lacunae. The bone-cells are so placed that their long axis lies parallel to that of the Haversian system of which they are a part. The lacunae measure, on an average about one-five hundredth of an inch in length, and one-two thousandth of an inch in breadth. The bone tissue passes into the grooves of the convoluted base of the tooth.

The dentine of the tooth (fig. lxxxvii.), is freely pierced by tubules, the largest of which measure about one-ten thousandth of an inch at their origin; they arise from the pulp-cavity at right angles in the base, and proceed in the same direction to the periphery, but as they arise nearer and nearer to the apex, they approach more and more to the perpendicular; the basal calcigerous tubules do not present any distinct primary curves, but they, like all the tubes, are minutely waved; the tubes in the body have a distinct primary curve, which is convex pointwards, during the first half of their course, afterwards they run at right angles to the periphery. The tubules branch very abundantly and in a dichotomous manner, they are given off at a very acute angle, and do not apparently anastomose with neighbouring ramuli, but proceed on to the external surface where they interlace somewhat with each other; the peri-

pheral branches are exceedingly fine and numerous. The intervals between the tubules are about equal to the diameters of one, sometimes two, tubes. In vertical and transverse sections contour lines are very beautifully shown, they are caused by the abrupt curvature of the tubes on one plane, there not being any of the granular cells that we observed in the contour lines of a tooth of *Megalichthys*.

A transverse section of the base (fig. lxxxviii.), shows the convoluted dentine, and I have thought it well to give this illustration as it exhibits the convolutions so perfectly, and also the osseous tissue running into the external grooves. The dentine of this part presents all the characters of the bases of *Megalichthys*' teeth, dividing into roots in the same manner. The roots penetrate very deeply into the bone, preserving their dentinal features almost to the end, but finally they blend rapidly with the osseous tissue. I had intended to give a drawing of the insertion of the roots of these teeth in the bone, but I find that the accompanying plate will be sufficiently filled without it, I shall portray the roots of *Archichthys* instead.

The enamel is a comparatively thick layer covering the whole of the exerted part of the tooth, but it differs in thickness in different specimens. I have sections in which this coat varies from one two-hundred-and-fiftieth of an inch to two-thousandths of an inch. It is permeated by the terminal dentinal tubules, but they do not affect the clearness and transparency of the tissue. The fine striations that we observed on the external surface of the tooth only belong to the enamel, the dentine not being ridged in the slightest degree.

Genus. *Orthognathus*. (Barkas).

Our knowledge of this genus is exceedingly slight; in fact only five fragmentary pieces of dentary bones have been obtained, but there can be no doubt that these jaws belong to a genus that was unknown to science until described by Mr. T. P. Barkas. As no other palæontologist has written anything concerning these dentary bones, I shall quote the description given by the founder himself in the "Scientific Opinion" for 1870. In that account only the external characters are detailed, no microscopical examination having been made on account of the extreme rarity of the specimens; Mr. Barkas, however, has kindly allowed me to make

a section of a portion of one of the jaws for the purposes of this paper, so that I am enabled to give a detailed description of its histological characters.

"The jaw* is lying upon a slab of shale, which measures five inches by four inches, and the jaw before deposition has been broken into two almost equal parts; the two fragments lie near each other upon precisely the same plane. (I have exhibited this maxilla in fig. xc., but I have united the two fragments). The teeth, forms of the fragments, and external markings closely resemble each other, and the two fragments constitute the greater part of the right maxilla of a fish or reptile. The length of the two fragments when united is four inches, the depth of the maxilla near the point of symphysis is three-eighths of an inch; it gradually widens (qy. narrows) towards the articular extremity, near which it is seven-eighths of an inch deep; the thickness of the maxilla at one quarter of an inch above the alveolar margin is five-sixteenths of an inch, and its thickness at the upper margin is one-eighth of an inch. The teeth are arranged in a continuous series of uniform size along the alveolar border, a strong bold ridge is continued along the entire jaw, and the teeth are placed one-eighth of an inch behind the projecting ridge. The external surface of the maxilla is covered with minute, well-defined rugose markings, having the appearance of inosculating ridges, and, besides the pits and depressions formed by the frequent union of the ridges, the jaw is covered with more minute pittings that require the use of a highly magnifying lens to render them distinctly visible. The teeth are one-twelfth of an inch long; they are stout, compact, and strong, and are placed along the entire jaw at an uniform distance from each other of one-twelfth of an inch. Within the space of one inch there are ten teeth, and the maxilla, which is four inches long, contains forty teeth of uniform size, placed at uniform distances from each other. The teeth, which are smooth, black, and glistening, are free from longitudinal striæ, except at the roots, where there are slight indications of a plicated structure. The inner part of the jaw, which at one part is well exposed, is on its lower and upper portions marked with bold longitudinal lines. The articular (posterior) extremity

* The author in this description called the jaw a mandible, but the discovery of other jaws showed him that it was a portion of a maxilla, and he corrected the mistake in a future letter. I have given the quotation in its corrected state.

of the jaw is absent, and I infer from the general appearance of that portion in my possession that one inch of the maxilla is lost." From this description it will be noticed that Mr. Barkas is somewhat in doubt as to the nature of the animal that possessed this dentary bone, whether it was piscine or reptilian, but he is inclined to consider it to belong to the fish tribe. When we compare this jaw with those of *Megalichthys* and *Rhizodopsis*, I think we need hardly hesitate to consider it as pertaining to a fish belonging either to the *Saurodipterini* or the *Glyptodipterini*, but more probably to the latter, because the bone is sculptured, and not enamelled. As we shall see directly the minute structure is also closely allied to that of the two genera I have mentioned above, an alliance that gives a greater air of probability to this classification. A later discovery of fragments of a mandible and maxilla by Mr. Simm, of West Cramlington, and of the greater portion of a mandible by Mr. Barkas, completely sets the matter at rest.

The mandible (fig. lxxxix.) is a long narrow bone, and closely resembles the form of a mandible of *Strepsodus*. The external surface is ornamented like that aspect of the jaw already described, and its anterior extremity is crossed by a deep depression; this end of the jaw is much the thickest and deepest. The internal surface is smooth, and there runs along its whole length a strong bar of bony tissue, which is most pronounced anteriorly; this ridge is situated a short distance below the edge of the alveolar margin, and from its superior surface rises the laniary tooth; in this feature the bone resembles a mandible of *Megalichthys*. The serial teeth spring from bone above the internal longitudinal bar and a little below the edge of the alveola. The laniary tooth is situated at the symphysial extremity; it is much fluted at its base, but in other respects it resembles the serial teeth. Only one laniary tooth is visible in this specimen, but it is probable that there are others that have either been broken away or are hidden in the shale, just as the laniary teeth of *Megalichthys* and *Rhizodopsis* are very frequently buried or wanting. The tooth in fig. lxxxix. is broken, so I have only sketched the outline of the part remaining.

In naming these fragments of jaws, maxilla and mandible, I have followed the terms employed by Mr. Barkas, but after a close examination of all the specimens extant, I am

of opinion that the so-called maxilla, fig. xc., is the posterior end of a mandible, but not of the mandible shown in fig. lxxxix., for when complete the former would be a much larger jaw. In this conclusion Mr. Barkas is inclined to coincide with me. Certainly there are not any fossil fish maxillæ that I am acquainted with that possess an anterior extremity similar to fig. xc., while such is the frequent form of the posterior ends of mandibles.

I have been enabled to examine under the microscope only a vertical section of a portion of a mandible; fortunately the section is a good one, and shows the characters of the bone and teeth. In the inferior portion of the jaw the tissue predominates over the Haversian canals, but they are about equal in the upper or alveolar part. The inferior canals are very large and appear to run transversely through the bone, and it may be that they open on the external surface, and cause the minute pitted appearance there observed; all the canals branch freely enough and form numerous anastomoses; this is more especially the case in the tissue of the alveola. The osseous matrix surrounding the canals shows a tendency to lamination, but it is not distinct around all. Lacunæ are present in large numbers, and arranged around the canals, but not in regular rings; their long diameter, however, is always parallel with the Haversian canal, with which they are contiguous; they vary much in size according to the portion of the jaw examined, the largest being found inferiorly. They measure from one-five-hundredth of an inch long and one-four-thousandth of an inch broad, to one-one-thousandth of an inch long and one-two-thousand-five-hundredth broad; these bone-cells, therefore, are truly piscine, the inferior cells being generally eight times longer than they are broad.

The serial teeth are inserted in sockets, formed by depressions in the alveolar margin, these sockets are further deepened by the addition of a ridge of bone to the mouth of the cavity which embraces the tooth just above the base where it has begun to contract towards the apex. The portion of the tooth that enters into the socket exhibits a tendency to divide into roots, but the inclination does not proceed further than the unfolding of the dentine, division not taking place. The base of the tooth does not blend with the bone, but is separated from it by a thin layer of what Professor Owen designates osteo-dentine in his des-

cription of Coal Measure teeth; whether this tissue is or is not correctly so-called, I do not intend to dispute, but it must be understood that it is quite distinct histologically from vascular dentine.

The laniary tooth is anchylosed to the jaw in the same manner as the laniary teeth of other Saurodipterines and Glyptodipterines; the transverse fracture of the base of the tooth in fig. lxxxix. shows a distinctly convoluted outline.

The dentine is permeated by numerous tubules which measure from one-ten thousandth of an inch to one-fifteen thousandth of an inch in diameter at their origin; they have a general tendency to incline upwards towards the apex, and in their course they display two or more very slight primary curves, the first being concave pointwards, they are besides rendered wavy by numerous secondary bends, in the base the first primary curve is the most pronounced, but the tubules that arise nearer the apex at the second or convex bend are the most apparent. The tubes divide dichotomously, the branches being given off at a very acute angle, they then run parallel to the main tube, and do not appear to anastomose; nor do they suddenly become finer near the periphery so as to form a layer of dense tissue beneath the enamel, but the tubules undergo the change gradually. I have not observed any contour lines in these teeth.

The enamel is a clear structureless looking tissue, it is about one-two thousandth of an inch in thickness, and covers the whole of the exerted part of the tooth.

Defective and Decayed Teeth a Cause of Imperfect Mastication, producing much Needless and Unsuspected Suffering.

By ARTHUR W. EDIS, M.D.,

Assistant Obstetric Physician to the Middlesex Hospital, &c.

My attention of late has been prominently directed to a class of cases, the main features of which are indigestion, flatulence, sudden attacks of diarrhoea, oppression after eating, and other well-marked symptoms, due entirely to imperfect mastication from defective and decayed teeth. With the hope of impressing more forcibly upon the members of the profession the importance of this frequent and yet unsuspected cause of deranged health, I venture to give a brief outline of a few of the most frequent and distressing symptoms.

My experience has been nearly entirely confined to the female sex. I have met with a considerable number of patients both in hospital and

private practice who, though apparently blessed with good constitutions, seldom know what it is to enjoy perfect health. Although surrounded by circumstances calculated to produce health of body as well as mind, they are frequently the subject of hypochondriasis, neuralgia, dyspepsia, diarrhoea, flatulence, headache, colic, palpitation, lassitude and oppression after eating; amenorrhoea, dysmenorrhoea, leucorrhoea, and other symptoms often ensuing in consequence. Relief for these is sought at the hands of the profession, and in too many instances efforts are made to counteract the effects without attempting to obviate the cause. Bismuth and soda, ipecacuanha and capsicum, hydrocyanic and nitric acids, strychnia, quinine, chalybeates in all their various forms and combinations, are tried in vain, and the patients drift about from one practitioner to the other, deriving but temporary benefit from anything and doing credit to no one.

In many of these instances the medical attendant is fairly taken off his guard. He requests permission to see the tongue, and notes perhaps the perfect and regular phalanx of incisors through which it is protruded; but unless special attention be called to the state of the molars he seldom observes the decayed and defective condition of these, and proceeds in his investigation of other organs, getting further and further from the cause of all the suffering.

I have met with many cases of palpitation, where digitalis had been prescribed in vain, and even proved injurious, which were relieved within a few weeks after the insertion of a set of molars. Equally efficacious has been the science of mechanics when the science of therapeutics in its more restricted signification of the materia medica has signally failed, in cases of chlorosis, accompanied by scanty and painful menstruation, where iron and aloes had been given *usque ad nauseam*. Dysmenorrhoea of a very aggravated form is in many cases due not to flexion or displacement of the uterus, nor even to constriction of the cervical canal or ovarian congestion, but chiefly if not entirely to defective innervation dependent upon deficient assimilation. Chalybeates and tonics in these patients are of comparatively little value, until the defect in the teeth has been remedied and proper mastication ensured.

During pregnancy the usual reflex irritability of the stomach is in many cases considerably aggravated by deficient mastication; and I feel certain that mechanical dentistry would accomplish more than oxalate of cerium, oxide of gold, or any similar preparations in many of these cases.

There are a certain class of patients frequently met with who consult us for imagined uterine disorders, the true source of their suffering being abdominal derangements due to defective mastication. The proof of this consists in the fact that the symptoms abate on the defect being remedied; whereas, previously, remedies directed specially to the alleviation of uterine disorder had been tried in vain.

In some instances of emaciation, attended by pallor of the countenance and a hacking cough, due to congestion of the stomach from food being constantly presented to it in an imperfectly masticated condition, the presence of phthisis has been seriously suspected, and much anxiety on the part of friends has been caused by what they believed to be manifest symptoms of commencing decline. Several instances of this have occurred to me, similar to the one given below.

Our ignorance of the pathology and early beginnings of cancer forbids me to speak with any precision upon the question of how far the constant and continuous irritation to the bowel from food passing down in an undigested—because unmasticated—condition, may serve to determine the condition eventuating in cancer, where the hereditary tendency is well marked; but my conviction is that I have met with several cases of cancer of the bowel due to the irritation thus caused. One very marked case apparently of this nature recently occurred in a single lady, æt. 38, who for many years had been subject to irregular attacks of spasm, colic, diarrhœa, dyspepsia, and the other symptoms usually observed, and in whom I detected a complete absence of any masticating surface properly so-called. I could multiply instances indefinitely did time and space permit, but my object will be attained if I succeed in directing more prominent attention to what I believe to be a very frequent source of much unsuspected and unnecessary suffering. I will, therefore, content myself with the narration of a few illustrative cases.

M. G., æt. 26, single, was first seen Jan. 7th, 1874. She complained of dyspepsia, constipation, alternating with frequent attacks of diarrhœa, spasm, colic, severe pain in the epigastric and right hypochondriac regions, flatulence, palpitation, and other like symptoms, together with frequent attacks of neuralgia. The patient was a well-made, tall, interesting-looking young lady; but her good looks were sadly marred by her pinched expression of features, sallow, muddy complexion, attenuated frame, and general aspect of malaise. She had consulted numerous medical men, and tried very various remedies—*ipêcacuanha*, bismuth, opium, *et id genus omne*. Her friends, thinking she was going into a decline, had sent her away for months at a time to Holland, France, and Germany; but her condition remained unaltered. She had also frequent attacks of bleeding piles. A careful examination of the various organs was instituted. The tongue was furred; the breath very offensive. The front teeth were sound and healthy. On requesting the patient to open her mouth in order to examine the condition of the others, it was found that the molars were in a sadly deficient state. The upper ones were mostly carious; many of them being decayed down to the margin of the gums, two only being in a state at all approaching to soundness; and these were opposed in the lower jaw by a mass of decayed stumps, which offered no surface for mastication. The bicuspsids were also much decayed and broken down. The probable cause of her suffering was explained to the patient, and she was exhorted to procure an artificial set of teeth in order to secure proper mastication of her food. The catamenia were scanty but regular in their periodicity. Nothing abnormal as regarded the abdomen could be detected; though there was manifest tenderness over the epigastrium. A mixture of bark and acid was prescribed, and a suitable diet suggested until the alteration could be effected. A few weeks after this she had several of the most decayed stumps removed, and in due course a set of artificial teeth adjusted. Six months from this date I with difficulty recognised my former patient, when she entered my consulting room. Her general looks had not only markedly improved, the countenance being cheerful and animated, the complexion clear and healthy, but she had gained much in health and strength. "She never felt so well in her life, nothing ails her now, can eat and drink anything,

and feels quite a different being." There had been no return lately of her former attacks. The neuralgia had quite disappeared, as also the bleeding from the bowel; and in short she was perfectly convalescent. In August, 1875, I saw her, though not professionally. She had given up taking pills and mixtures, and had entered into the matrimonial estate, and was in every respect as healthy as possible.

This is doubtless a typical case, and as such I give it; but there are numbers of patients who, if they do not suffer to such a marked degree as in this instance, are yet constantly distressed with headache, dyspepsia, costiveness, alternating with attacks of diarrhoea, "spasms," colic, languor, nervousness, and other well-marked symptoms, due almost entirely to defective mastication from loss or decay of the molar teeth, the mischief being unsuspected.

Another well-marked instance recently presented itself in the form of a young fragile, delicate-looking creature, who was supposed to be suffering from consumption, and was on the eve of being exiled with a view to giving her a chance of prolonging her life. A sudden attack of severe colic and diarrhoea, to which on inquiry I found she was frequently subject, necessitated her being seen professionally. Her usual medical attendant being away, I was requested to see her. I was much struck with the pale, anæmic-looking countenance; the anxious, almost discontented expression; the emaciated condition of the body generally; and the great similarity in the symptoms to those detailed in the former instance.

On examining her mouth, the same furred condition of the tongue, foetor of the breath, and general state of decay of the molar teeth, convinced me that imperfect mastication played an important rôle in the production of her state of health. The front teeth in this instance also were perfectly sound and exceptionally clean and regular, so much so that the lady who accompanied her, on my remarking on the condition of the molars, replied that she had hitherto believed the young lady in question possessed an unusually good set of teeth; but was convinced to the contrary on my requesting her to inspect the actual state of affairs. On making a careful examination of the chest, I failed to detect any symptoms of tubercular infiltration in the lungs, there being merely some moist mucous râles dependent upon a slight amount of bronchitis accompanying an ordinary attack of catarrh, to which the depressed condition of her vitality rendered her frequently liable.

Having improved her general condition somewhat, she summoned up sufficient courage to have the whole of the decayed stumps removed. A set of artificial teeth was subsequently inserted, and within three months from this time her personal appearance as well as general state of health had improved wonderfully. The frequent attacks of spasm and diarrhoea quite disappeared; the appetite increased; the cough diminished; and the patient literally became a new being.

Another case typical also of many such may be briefly mentioned.

N. D., æt. 25, a comely, healthy-looking young lady, presented herself complaining of scanty and irregular menstruation; the intervals between the periods often occupied from six to ten weeks, and there was much discomfort at the times. On inquiry, I found that her appetite was good, but that immediately after meals she was frequently obliged to retire to her room in order to unfasten her dress on account of the uncomfortable distension that ensued. She also often had to lie

down for a time as she was oppressed with an overpowering sense of drowsiness after eating, and her face became so flushed that she was quite ashamed of it. The bowels were generally very constipated, seldom acting more than once a week, and often only once a fortnight; except at times, when a sudden attack of diarrhœa would supervene, attended by much abdominal pain, for which brandy was habitually taken. The pulse was slow and feeble, and she was frequently subject to most distressing palpitation.

Examination of the mouth confirmed my suspicion that defective mastication was the principal cause of these symptoms. There was positively no masticating surface, the under portion of the jaws being chiefly occupied by decayed stumps—a veritable charnel-house. These were removed on three separate occasions, and an artificial set of teeth adjusted. Six months from this date the improvement in the general health was most marked. The pulse was stronger, the palpitation had almost entirely disappeared, the bowels acted regularly, the attack of diarrhœa had ceased, the flushing of the face and sense of oppression and drowsiness after meals no longer existed, and the general tone of the system had markedly improved. The catamenia became more regular and normal in character, and there was far less constitutional irritation and distress on the recurrence of the periods.—*Medical Examiner*.

A Clinical Lecture on Tertiary Syphilis of the Soft Palate and Pharynx.

Delivered at University College Hospital, Feb. 24th, 1876.

BY BERKELEY HILL,

PROFESSOR OF CLINICAL SURGERY IN UNIVERSITY COLLEGE, AND SURGEON TO THE HOSPITAL.

GENTLEMEN,—There have been recently in hospital some cases of late syphilis of the palate and pharynx which exemplify the various ways in which that disease manifests itself in that region; and as I have been fortunate enough to obtain for you to-day several examples of these affections, it will, I think, be profitable to consider the morbid conditions more systematically than is possible when watching the progress of single cases in the wards or out-patients' room.

In passing, let me remind you of a peculiarity in the course of syphilis concerning the pharynx—namely, the rarity with which the pharynx proper is attacked in the early periods of syphilis. As you know, the anterior surface of the velum palati, the pillars, and the tonsils are constantly the seat of erosion, mucous patches, &c., while the eruptions are present on the skin. The larynx likewise is commonly affected in early syphilis. The pharynx nearly always

escapes. The reason of this is not obvious, for there is no natural incapacity in the part; mucous patches and erythema are occasionally seen on the posterior wall of the pharynx. In searching for cases of tertiary pharyngeal disease, I came upon one case where a mucous patch was recorded to have been developed in the posterior wall of the pharynx during the early eruptive period. This is, however, the only one I recollect to have seen. Besides mucous patches in adults, in inherited syphilis, when there is coryza of the Schneiderian membrane, the pharynx is frequently reddened. On the other hand, in the later periods of syphilis, when for the great majority of persons the disease is extinct, the pharynx is a chosen site for tertiary affections, and the ramifications into neighbouring structures are often widely spread.

With regard to the time after infection that tertiaries appear in the pharynx, reference to my notes shows that a shorter interval is customary than is generally laid down in text-books. It is often difficult to obtain precise data on which one may rely for calculating the age of syphilis. In a remarkable case of aphasia from syphilitic disease of the brain, whom many of you may recollect to have seen frequently during 1874-5, the patient's pharynx was attacked four years after infection. Besides seven patients who are here to-day for your inspection, I have also collected nine cases from my female case-book for 1868 at the Lock Hospital, in which the date of their infection and that of the beginning of their throat disease are clearly made out. Of the seven patients, in three the date of infection is probably long anterior to their throat disease; two are married women, and their syphilitic histories have for a chief symptom a long series of miscarriages and dead children; the third is a man, but though uncertain how long, he has probably been infected more than five years. In the remaining four, one was infected five years ago, and has had his throat fourteen months affected; in another a circumscribed gumma began two years after infection. The remaining two patients are young, eighteen and ten years of age respectively, and their syphilis dates from infancy, being probably inherited. They are quite unaware when their throats were first affected, though certainly it happened several years ago. In the nine cases from the note-book—in one the disease began three years after infection, in four between four and seven years, in two more than seven years,

and in the remaining two more than ten years elapsed between infection and the outbreak of tertiary in the throat. From these data it would seem that four or five years is the commonest period for syphilitic persons to become liable to gummous disease of the palate and pharynx, though it is not infrequent for their disease to begin sooner than that. Mark another point also in these cases. The early skin eruptions were ill-marked and transient, so fugitive in some that the patients had not noticed them at all. The man with a gap in the velum is quite unaware that he ever had a rash. All he recollects is a comparatively recent tertiary ulcer of the skin. I draw your attention to this character, because I believe it to be a frequent one in those who have tertiary syphilis of any kind, and probably has some influence in causing the tertiary proclivity.

There are two forms of gummy disease of the palate and pharynx: the *circumscribed* and the *diffuse*, or infiltrating. Their anatomical seat is the mucous membrane, the sub-mucous or muscular layers. These different localities of origin cause some diversity in the symptoms and effects; thus they have a practical interest. The circumscribed and infiltrating varieties may be present simultaneously, though often only one is developed. This child, whose gumma of the forehead was so conspicuous two weeks ago, is an example of the diffused form. Her palate is seamed in all directions with the scars of an infiltrating gumma of the mucous membrane, which, not having penetrated the muscular tissue, has not greatly interfered with the function of the part. This man, from ward No. 10, has a round hole in his palate, but now the edges are healed, the remainder of the palate being unaltered. He is an example of the circumscribed gumma. This woman, whose long history of miscarriages and dead children we extracted from her some days ago, has well-marked infiltrating gumma of the posterior wall of the pharynx and extensive implication of the bones of the nose and base of the skull.

The circumscribed gumma is the most common form, both in the velum and in the pharynx proper. It is usually single, though not invariably so. Owing to the insidious progress, it rarely attracts attention until it breaks by ulceration. If, however, a gumma is detected at an early stage, it presents a small, clearly circumscribed, solid mass, often almost globular in shape. In the velum, most frequent

at the mesial line, near the hard palate, rarely at the sides, though I have seen it in the anterior pillars, and even in the uvula. In the pharynx there appears no predilection for the mesial line; there they form indifferently on any part. Beginning most commonly in the submucous or muscular layer, the great majority speedily spread to the other structures, and grow sometimes to a considerable size before they soften and break through the surface. Seldom larger than a cherry, they are recorded to have grown as large as a hen's egg. In such cases they have seriously impeded deglutition and respiration by their mere bulk. Fournier* relates a case where a patient, having long had a "bad" throat, became at last quite unable to swallow, and breathed but with great difficulty. Nothing could be seen, but on searching the neck with the finger opposite the thyroid cartilage a swelling, apparently as large as a quarter of a lemon, could be detected. Presuming this to be syphilitic from the patient having had syphilis previously, he administered iodide of potash. In a few days the swelling was gone, and the patient could eat and breathe with perfect ease.

If untreated, sooner or later, generally in a few weeks, the tumour softens, and its liquid part escapes in the form of glairy viscid fluid, which is soon changed to viscid pus. Thus an ulcer is formed of circular or nearly circular shape, the surface irregular, hollowed; through its covering of adhesive pus project shreds of gummous tissue not yet detached, and irregular granulations. The edges of the ulcer are characteristic; they are thickened, raised, and reddish, forming often a kind of frame to the sore. Thus a large gap in the velum or a pit in the pharynx is produced, which is commonly increased by further conversion of the natural tissue into gummous tissue, and destruction by necrosis or phagedænic ulceration. But this is not invariable; instances are not rare in which the velum is perforated by a round hole, supple, and contracting or expanding readily by muscular action. If the gap in the velum is large, fluids, especially thin ones, escape into the posterior nares, and the voice assumes more or less of a nasal twang. But when the hole is small it often produces no perceptible effect on articulation, and the patient learns to compel the food to pass

* 'Doyon's 'Annales de Dermatologie et de Syphilis.' No. 6, 1873-4.
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completely into the gullet. Less inconvenience than even this results from a circumscribed gumma in the pharynx, which, when healed, leaves only a depressed scar. The serious deformities of the palate or pharynx are produced by the infiltrating form which I shall presently describe.

When the gumma is developed on the posterior surface of the velum, or summit of the pharynx, it is rarely detected in an early stage, or until ulceration is far advanced. The symptoms that lead to suspicion of it are usually present to some degree: they are, dryness and discomfort of the pharynx, a frequent desire to clear the throat of a viscid mucus, which is less readily accomplished than usual, pain in swallowing, a humming in the ears when the gumma is situated near the Eustachian tubes, obstinate coryza, and, after ulceration has begun, pus and streaks of blood in the discharge from the nose. These symptoms get worse rather than better with lapse of time. But it often happens that considerable injury is caused before the nature of the disease is discovered. There was an interesting example of this kind last year in Ward 3, under the care of Dr. Wilson Fox, with whom I saw the patient on several occasions. The patient, giving no history of previous syphilis, complained of great pain in swallowing, dryness of the throat, and general malaise. Nothing could be seen in the throat except pallor of the velum, nor could anything be detected by the finger. While we were uncertain of the nature of her ailment, luckily for our diagnosis an iritis appeared in the left eye, which gave a clue to the origin of the throat affection. That, with the iritis, speedily improved when mercury was given, though not before the gumma became evident in the palate, and, breaking, left a permanent gap. I need not remind you that in searching for these gummata you should use the rhinoscopic mirror, and you may gain in that way ocular demonstration of the cause of the symptoms. But you will meet with patients whose fauces are too irritable to allow the velum to be lifted while the mirror is introduced. When this is so, if you take a broad bent spatula or spoon to draw the velum well forward, and while the head is opposite a good light, the greater part of the back of the palate and pharynx can be seen before reflex movement is roused. The palate appears to bear forcible displacement with a broad blunt surface more patiently than the gentle tickling of a small hook or the pinch of a forceps.

The *diffused* or infiltrating form develops in two varieties—that which limits itself mainly to the mucous membrane, and the severer variety which penetrates the submucous and muscular layers. The first leaves wide-spread seams and branching scars, the site of former creeping ulcers; but, the deeper layers having escaped, the organ retains its mobility, and apparently has undergone no detriment of function. The penetrating variety converts all it reaches into a tough, brawny, resisting tissue, and its progress is difficult to arrest before the whole velum and pharynx have been essentially altered in structure. At the outset the velum and pillars are much thickened, partly by the new growth, partly by œdema, which greatly hamper the action of the muscles. Soon the infiltration reaches the posterior wall of the pharynx, which, rendered thick and rigid, projects forward towards the velum, and greatly diminishes the cavity of the pharynx. A considerable surface is invaded before ulceration begins, but sooner or later the surface breaks, often at several centres, and a group of indolent uneven sores are formed, healing here and spreading there, and covered with sticky muco-pus or diphtheritic exudation. The healing process is also peculiar. The rigid infiltration, so widely and deeply penetrating, is slowly transformed into a tough, highly contractile fibrous tissue, which replaces the normal tissue; its only covering being a brittle epithelium, that is readily chafed away into shallow indolent sores. The consequences of this slow conversion of the natural tissue into dense tough fibrous cicatrix are pain, deformity, and more or less loss of function to the organ.

Severe pain is seldom felt before ulceration with the isolated gumma; here, on the contrary, pain begins very early, varying in amount with the situation of the morbid process. When the parts are at rest there is little pain, but speaking more than a few words brings a sense of fatigue from the impediment or muscular contraction. The voice is thick and husky at first, becoming, when contraction is advanced, hissing or hoarse, like a drake's; and, owing to the difficulty of swallowing, the patient is continually hawking and spitting out a thick glue-like mucus. Swallowing inflicts most severe pain; solids after a time cannot be swallowed at all, and then liquids with great difficulty.

But these calamities are not the worst that may befall the

miserable patient. The infiltrating new growth may spread to the posterior nares, destroying the mucous and periosteal lining of the delicate bones, causing either necrosis of large pieces or destroying them by syphilitic osteitis. In this way, the bones of the nose, of the palate, of the sphenoid, of the basilar part of the occipital bone, the bodies of the upper cervical vertebræ, may be cleared away. Thus the brain or the spinal cord may be seriously and fatally affected. Sometimes the infiltration and consequent phagedæna reach a large blood-vessel and occasion sudden dangerous hæmorrhage. There is another effect produced by the contracting scars: the remnant of the velum becomes adherent to the roof of the pharynx. Usually there is left a gap in the centre, large enough for the forefinger to enter, by which communication between the nose and the pharynx is still possible. But sometimes this aperture is very small, or even entirely closed, when of course air can reach the lungs through the mouth alone. At other times the greatest deformity is in the fauces; the isthmus is replaced by a gristly ring much narrower than the natural mobile yielding sphincter, and which draws up and holds the root of the tongue and epiglottis, or the remains of that structure, in an almost immovable position. It is difficult to exaggerate the constant suffering this entails.

A few words on the treatment of these cases. This resolves itself into curing the general cachexia, and allaying the local suffering. The iodides of potash, soda, or ammonia are the chief resources. In most cases you have merely to begin with moderate doses of iodide of potash, and gradually increase them by adding one-third to the dose every three days as long as the gummata are not absorbed, and the ulcers unhealed. As soon as they are healed the iodide may be lessened, and, after a few weeks, omitted for a time altogether. But, unfortunately, there are patients who cannot take iodide of potash in sufficient doses or even at all, without being iodised. Most of these patients, nevertheless, can be brought to bear iodine if it be given in a way suited to them. Sometimes the iodide of soda is borne when the potash salt causes intolerable depression, and both are more efficacious when they are taken with carbonate of ammonia. Sarsaparilla also will afford tolerance for large doses. The time at which the medicine is taken is of importance. The stomach can bear

a heavier dose when full of food than when fasting. Again a large dose can often be borne at bedtime if drunk with effervescing water. Perhaps the effervescing carbonic acid soothes the stomach until the iodide is absorbed. When neither iodide of potash nor iodide of soda is tolerated, there is still the iodide of ammonia, which, being wholly volatile, probably undergoes complete decomposition, and affects the blood less injuriously than do the large quantities of fixed alkali which are combined in the other iodides. But this salt is very unstable, decomposing in even watery solutions, and still more readily in vegetable infusions. Hence, when given an excess of sesqui-carbonate of ammonia must be added to the solution. With this precaution this iodide will sometimes succeed when the others have failed. As an antidote to syphilis it is, I believe, identical with them in its effect. The next drug in order is mercury. Indeed, though it is advisable to delay the administration of mercury until the iodides have driven away the gumma, healed the ulcers, and restored the patient's strength to some extent, mercury should always form a part of the course. When iodides cannot be borne, try mercury at once; and in these debilitated persons the least injurious way is by inunction. Every evening twenty grains of the strong mercury ointment should be rubbed into the skin. This may be done also while the iodide is continued. If given by the mouth, a suitable dose is three-quarters of a grain of the green iodide of mercury as a pill daily at breakfast-time; or one-sixteenth of a grain of cyanide or bichloride of mercury in a pill, with a sufficiency of sugar of milk, every four or six hours, is also an efficacious way of bringing the patient under the influence of the drug without distressing the stomach. Indeed I have found that mercury, like some other medicines, is more effectual in small frequent doses than in large doses at long intervals. The disadvantage of frequent doses lies in this: the patient is apt to forget some of his pills when he has several to take in the course of the day. He can manage one night and morning, but the intervening doses are often omitted. When the patient has been fitted with the form of antidote, whether of iodine or mercury, which he can absorb, his recovery may be assisted or his suffering relieved by opium, also in small frequent doses, and strength be given by iron, quinine, or cod-liver oil.

He will need suggestions for supplying himself with nourishing food that he can swallow ; such must be chiefly strong soups thickened with arrowroot, milk similarly thickened, jellies with wine in them, and such easily swallowed solids. That well-puffed article of food, *revallenta arabica*, prepared with milk, is an excellent kind of food for these patients. It is not a starch, but chiefly a very purely-prepared flour of lentils. Much alcohol is hurtful, by hindering the absorption of mercury or iodine. Then as to local remedies : caustics must be avoided, they cause pain when they reach the ulcers, and don't arrest the phagedæna ; general treatment must be trusted for that. Assiduous sponging with soothing lotions are the most successful. Weak solution of borax with a little glycerine, steam with creosote vapour, or a solution of bichloride of mercury, with one-sixth of a grain of mercury to the ounce of water, when there is great soreness and consequent spasm, are most useful. Frequent washing with the nasal douche is of great service to clear away the mucus and discharge of the nares. The gaps that are left are not promising for plastic operation. The tough cicatrices of the infiltrating variety should never be stitched. Very tight bands may sometimes be cut across, but even then the resulting scar often shrinks almost as much as it had at first. Plastic operation may be attempted to close a gap in the palate left by the breaking down of a gumma when the neighbouring tissue has lost little of its natural suppleness. But it is in nearly all cases best to wait until the contraction which follows cicatrisation has finished, and to close the diminished orifice with an obturator, which dentists now fit with great skill and success.—*The Lancet*.

The Teeth in Literature.

By W. C. BARRETT, M.D.S.

From the earliest times attention has been paid to the teeth, not only as important organs in the human mechanism, but as affording indications extremely useful in the diagnosis, or prognosis of disease. Among physicians of to-day, an examination of the oral cavity is almost always preliminary to an opinion ; but the inspection usually goes no further than the tongue, which indicates but the then exist-

ing condition of the patient; whereas the teeth often bear marks which, to an intelligent observer, reveal all the previous sanitary history.

Hippocrates, the Father of Medicine, in his 'Prognostics and Prophecies,' frequently alludes to the importance of a close attention to them, as indicating the progress of morbid tendencies. Indeed, he has many wise suggestions, that it would be well if the dental, as well as the medical profession of this age, would ponder and study over.

In his 'Aphorisms' (18), he says, "Cold is inimical to the bones, the teeth, the nerves, the brain, and the spinal marrow." This, Theophilus and Galen explain, as meaning that the parts of the body here mentioned, are of a cold nature; possessed of little vascularity, and hence readily injured by a low temperature. It is an acknowledged fact, that the frequent neuralgias, and rheumatisms of the parts enumerated, may often be referable to the thermal changes.

The Bible has frequent reference to the teeth, and their relative importance in the human economy. In the Mosaic law, which was a code of retaliation and reprisals, special provision was made for the punishment of those, through whose crime or fault, another might lose a tooth. In the twenty-first chapter of Exodus, the general common law is laid down: "An eye for an eye, and a tooth for a tooth." Afterwards, in legislating upon the relation of master and servant, the great lawgiver says concerning this matter: "If he smite out his man-servant's tooth, he shall let him (the servant) go free, for his tooth's sake." In those times, the opinion was not entertained, that the teeth were furnished men for the express purpose of being removed for the insertion of artificial ones. It was not till this modern period of "cheap and nasty" dentistry, that such a thing was thought of. And yet, in those early days, some nations at least, were not without dentists and dentistry. Inspection of the remains found in some ancient tombs, show conclusively, that they were conversant with methods of filling carious teeth, and even of inserting an artificial substitute, in cases of unavoidable mutilation.

Among the ancient Egyptians, dentists were common, though they formed a part of the medical profession. Herodotus says:—(Enterpe Cap. 84,)—"The art of medicine is thus divided among them: each physician applies himself to one disease only, and not more.. All places abound in

physicians; some physicians are for the eyes, others for the head, *others for the teeth*, others for parts about the belly, and others for internal disorders."

This author also gives an account of one of the most interesting dental anomalies of which there is any mention. He says:—(Calliope Cap. 83,)—"After the battle of Platea, and when the Plateans brought the bones together in one place, there was discovered a jaw, and the upper jaw had teeth growing in a piece, all in one bone, both the front teeth and the grinders."

In all ages, the possession of a full and perfect set of dentures has been highly prized. Hear the opinion of the great satirist, Cerantes Don Quixote, after his famous rencontre with the shepherds, calls upon his squire to examine into the havoc made among his teeth, by the stones slung by his adversaries. "Pray sir," said Sancho, "how many grinders did your worship use to have upon that side?" "Four," answered the Don, "if not five; besides the eye-tooth; for I never in all my life have had a tooth drawn, or dropped out, or *rotted out by the worm*, or loosened by rheum." "Bless me!" quoth Sancho Panza, "why you have in this nether jaw, on this side but two grinders and a stump, and in that part of your upper jaw, never a stump and never a grinder. Alas! all is levelled there as smooth as the palm of one's hand." "Unfortunate that I am," said the Knight, "I had rather have lost an arm, so it were not my sword arm; for a mouth without cheek teeth is like a mill without a stone, Sancho; and every tooth in a man's head is more valuable than a diamond."

The teeth are frequently introduced as the foundation of some rhetorical figure. Montaigne uses them thus, to illustrate the same utter destruction which is spoken of in the Bible, as coming upon that which is crushed between "the upper and nether millstones." Indeed the Bible itself is full of such passages. The prophet Amos uses the term—"cleanness of teeth," as a synonym for starvation. Ezekiel and Jeremiah, to indicate in a periphrastic manner, the hereditary consequence of crime, say: "The parents have eaten sour grapes, and the children's teeth are set on edge." In Solomon's song, the picture of the perfect woman is not complete without the verse—"Thy teeth are as a flock of sheep that go up from the washing, whereof every one beareth twins; and there is not one barren among them"—

referring to the appearance in pairs, of the teeth of the perfect dentition. Job says of his great peril—"I am escaped by the skin of my teeth." The torments of the last are indicated by St. Matthew, in the expression—"There shall be gnashing of teeth." Rabelais, however, paints the lily by representing that in the hereafter dentists shall figure among the tormentors; for he says that in the world of evil spirits—"the four sons of Aymon are tooth drawers." Thoreau, the poet-naturalist, uses modern dentistry in a more complimentary simile; for he says—"The most of our expected ills are like the dentist's chair; much worse in the anticipation than in the actual amount of suffering experienced."

The importance of the teeth has always given birth to many aphorisms and proverbs in all languages. Of a fully-equipped soldier we say—"he is armed to the teeth." Of a pugnacious individual—"he fights tooth and toe-nail." Of a disputant—it was "proved to his teeth." A man is taunted by having a disagreeable fact "thrown in his teeth." One who, by adverse experience gains knowledge, is said to "cut his eye teeth."

The disease of teeth are often referred to in literature as amongst the most intolerable of the minor ills to which flesh is heir. Shakespeare says "I never yet knew a philosopher who could endure the tooth-ache patiently." Byron speaks of tooth-ache as the "Hell of all diseases." Dr. Johnson, the "Great Cham of Literature," said, "Laziness is worse than the tooth-ache;" thereby intimating that as the latter is the most unbearable of the bodily ills, so is the former the worst of moral diseases.

One of the oldest of Mother Goose's melodies (and few are aware of the antiquity of some of them) refers to a juvenile patient and his cure:—

"Little Tommy Grace had such a pain in his face,
So bad he could not say a letter;
When in came Sickly Long, singing such a funny song,
That Tommy laughed and found his face much better."

'Vishna Sarma,' that rare book of the Sanscrit, whose authorship is lost in the mists of antiquity, the teeth and their diseases are frequently used to point a moral. Here is one of the apothegms of that book:—

"It is better to tear up by the roots a rotten tooth, a faithless servant, and a wicked minister."

Small as these organs are, their relative importance has not, in literature, been over-rated. The whole process of nutrition is, to a large degree, dependent upon them. Situated as they are in the gateway of the alimentary canal, they meet the food at its entrance into the system, and their office, upon which the other functions are dependent, is the first to be performed. If the aliment be not properly prepared by mastication, it is useless for any purpose of nourishment. Mankind has had no need to be told this by the dentist, for there are few things so thoroughly accepted in literature as these truths, the practical application of which men so frequently ignore.—*Dental Register*.

Odontological Society of Great Britain.

ORDINARY MONTHLY MEETING, MAY 1st, 1876.

CHAS. VASEY, Esq., President, took the Chair at Eight o'clock.

Quain's "Anatomical Plates," coloured, were presented by Mr. E. Saunders.

Mr. HUTCHINSON showed three new forceps, two of them being adaptations of well-known instruments. The other was an original invention for extracting lower wisdom teeth, when, instead of being vertical, they were in a horizontal position.

The PRESIDENT showed a model of a case which he had seen in a hospital. The patient was a child four years and three months old. An upper bicuspid had come down through the gum. It was loose, and causing a great deal of irritation. He removed it, and found it was very little more than the crown. It was evidently a case of arrested development, and was remarkable as occurring in so young a child.

Mr. TURNER described a case of dilaceration, where the anterior wall of the very wide pulp cavity had been ruptured. The margin of the root, which in consequence of the accident projected beyond the gum, had upon it a small edge of enamel, so that the enamel had been torn through as well as part of the bone of the tooth. The posterior aspect showed a wide pulp cavity with the withered pulp in it, but in front there had been an obvious occlusion of

the cavity. It seemed to him that nature had been endeavouring to repair the accident by building up a new anterior wall to the cavity. It at first looked exactly as if a necrosed temporary tooth had driven the permanent incisor downwards and backwards, instead of allowing it to come forward into its proper position in the arch. Exploration with the probe, however, speedily dissipated that idea. It was evident from the colour that the tooth was dead.

MR. SEWILL showed a model of an impacted wisdom tooth. The wisdom tooth was coming through horizontally from the ramus and impinging against the posterior surface of the second molar. So close was the impact that it was impossible to explore the surfaces in contact with even the smallest instrument that would detect any decay, but on throwing in a syringe of cold water it was evident that one or both of the teeth were extensively carious, and the pulp was exposed. It was impossible to extract the wisdom tooth without the second molar; and in trying to remove the latter, both came out together. A large cavity was then visible in the posterior surface of the second molar, into which the crown of the wisdom tooth had gradually grown.

THE PRESIDENT, in reply to a question, said there was no history of any injury in the case he had described.

MR. RANGER mentioned a case of fracture of the lower jaw in a little girl three years old, who had been run over by a cart.

MR. TURNER described a case of fracture of the lower jaw that came under his notice at the Middlesex Hospital. A child had fallen from a second floor window, and the anterior portion of the alveolar arch was knocked backwards and inwards into the mouth. He brought the lacerated portions into position as well as he could, and the patient went on well until the upper incisors and one lateral were cut and came into position very nicely, the teeth that were formerly lying almost horizontally on the roof of the mouth having been shed. The fracture in the lower jaw was very long in uniting; and remembering a case related by Mr. Vasey of retarded union caused by the presence of the crown of a permanent tooth between the surfaces of the fracture, he probed through a sinus which had been established just under the base of the jaw, and in the course of a little time he was enabled to remove the crown of the permanent canine tooth. Afterwards the case healed rapidly.

The PRESIDENT said in former years he continually used forceps, but more recently he had used the elevator in nearly all his difficult cases.

Mr. TURNER said however skilful a practitioner might be with the elevator, there were cases, such as the removal of upper molar roots when the crown was gone and the three roots were united, in which such an instrument as Mr. Hutchinson's excising forceps would be found very useful.

Mr. ASHLEY BARRETT then read a paper on "The Use of Disinfectants in Dental Surgery."

Mr. MOON differed from Mr. Barrett's statement that there never was tenderness of the tooth on pressure without the presence of putrefaction. There was such a thing as sympathetic tenderness which accompanied the inflammation of the pulp.

Mr. HENRY said there could be no question that carbolic acid was the most valuable agent that had ever been introduced to the notice of the Dental Profession. He also could not agree with Mr. Barrett that wherever a tooth was tender there was putrefaction of the nerve. He himself had recently lost a large double tooth which was exquisitely sensitive to the touch, but which on being afterwards split had no putrefaction of the nerve.

Dr. FIELD thought if the roots or the pulps were thoroughly removed with the barbed excavator, and the antiseptic treatment adopted, a case would hardly require six months before a cure was effected. There were, however, certain conditions where it was utterly impossible to save the tooth. Salicylic acid was extremely useful in obstinate cases.

Mr. UNDERWOOD advocated the use of creosote in cases of alveolar abscess. In several cases where there had been sinuses he had washed out the sac until he found the creosote exuding from the opening, and then and there plugged the teeth, with satisfactory results.

Mr. DENNANT thought failures in the antiseptic treatment arose chiefly from two causes, first, the trouble that anæmic patients gave, and next, the want of courage on the part of the practitioner in not thoroughly opening up the pulp cavity.

A MEMBER said he had lately used tincture of Gelseminum, in doses of 15 minims, in cases where pains had been felt after stopping.

Mr. SEWILL said he could hardly agree with Mr. Barrett that inflammation of periosteum was invariably due to septic poisoning arising from the gases which resulted from decomposition of the dental pulp. Inflammation sometimes extended in consequence of the continuity of structure from the pulp to the dental periosteum. He wished to know on what theoretical grounds Mr. Barrett based his use of carbolic acid and wool as a permanent filling. The carbolic acid would after a time disappear, and the roots would then be no better off than if they were empty. Tenderness frequently arose from injury where there was no disease of the pulp.

Mr. COLEMAN said the object of the antiseptic treatment, as introduced by Professor Liston, of Edinburgh, was to bring an unhealthy and suppurating surface into a healthy and healing state, and he thought the expression "antiseptic treatment" should be confined to such cases. In some instances, even the dentine was more or less saturated with putrid fluids, and then the most powerful antiseptics should be used, to act as arsenious acid.

Mr. MOON recommended the application of a hot instrument to the tooth to ascertain when the pulp had lost its vitality, and there was no tenderness on pressure or any discolouration.

Mr. COLEMAN said that test could not always be relied on, as sometimes a tooth, of which the pulp had been destroyed, was more sensitive to heat and cold than any of the adjoining teeth.

Mr. BARRETT, in reply, said he advanced his views of the pathology of periodontitis with diffidence, as he had not given much attention to the subject for more than five years; but he had made some experiments which led him to consider that his opinions were correct. He regarded tenderness in a tooth as evidence of periodontitis. The tenderness was caused by the membranes around the fang being inflamed, and that inflammation, he thought, was the result of the escape of particles of putrefied nerve from the opening at the extremity of the fangs, these particles being forced out by the gases generated through the process of decomposition. It was quite true that now and then a tooth might be tender, upon pressure, from other causes. If a patient had a rheumatic diathesis, there was a tendency to inflammation in the fibrous structures situated in various parts of the

body, and the fibrous tissues lining the interior of the sockets might sympathise in the inflammation that was more or less affecting all the fibrous tissues of the body. Occasionally, too, inflammation outside the tooth might be the result of a blow or a splitting of the tooth during extraction. Still, he believed, in 90 per cent. of the cases inflammation outside the tooth was due to putrefaction within it, and the escape of putrefactive particles from the extremity of the fang. The subject was of considerable interest, and was still, perhaps, *sub judice*. As a matter of fact, he had always found, after extracting a tooth which had been tender on pressure, and had shown signs of inflammation outside, that on splitting the tooth there was that characteristic odour of decomposition which, once recognised, was never mistaken. As to the question of the time required for the treatment of periodontitis, combined, of course, with a putrefied condition of the pulp, young teeth, such as six year old molars, took much longer than teeth 50 or 60 years old, the pulp and extremity of the fangs being larger, and a much greater mass of putrefied material being locked up in the tooth. He preferred carbolic acid to arsenious acid, as it readily penetrated to the extremities of the fangs, and perhaps found its way into the interior of the dentine. He could not understand how dentine could be putrefied, composed as it was of earthy salts and an organic matrix. When dentine was strongly foetid, he thought the odour arose from putrefied nerve locked up in the tubules contained in the dentine. He did not think carbolic acid would be dissipated, even in twenty years, if it was enclosed by a permanent stopping.

A vote of thanks to Mr. Barrett for his paper was unanimously agreed to, as were also similar votes to the gentlemen who had made casual communications, and the donors to the library.

AN ADDITIONAL MEETING WAS HELD MARCH 15, 1876.

CHARLES VASEY, Esq., President, in the Chair.

A communication was read from Dr. Jelly "On a Case of Symmetrical Pigmentary Deposit in all the Teeth of both Jaws."

The PRESIDENT said the appearance described was very unusual. He did not think it depended upon anything connected with the early development of the tooth, otherwise it would have been seen in different parts.

Mr. DR LESSERT exhibited two upper incisor teeth covered with a yellow pigment, taken from a patient all whose other teeth were similarly marked without any apparent cause.

Mr. SEWILL thought that the discoloration described by Dr. Jelly could hardly be called pigmentation. He did not know that pigmentation was ever found in the tissues of the teeth except the deposit of colouring matter in caries.

Mr. WHITE thought that the staining on the teeth exhibited was only on the surface of the enamel, and did not involve the dentine. Probably resulted from some staining agent.

Mr. CHARLES TOMES exhibited an abnormal tusk of an African elephant, which he had purchased for the museum. The abnormality, he said, appeared at first sight to have resulted from such an injury as was often inflicted on the tusks by natives, affecting the grey pulp; but he was inclined to believe that it was in reality due to some very early malformation.

Mr. CHARLESWORTH confirmed Mr. Tomes's view as to the origin of the abnormal condition. He then exhibited a tusk forming part of the large importation of Siberian ivory made about two years ago in consequence of the great rise in the price of living ivory. For hundreds of years, he said, the fossil ivory of Siberia had had a certain amount of value in the market, but no large importation took place until the one to which he referred. The finest tusks fetched a very high price, but when they were cut up they were found to be worth much less than they had realised, so that the experiment had not been repeated. The exact position of the tusks in the head of the mammoth was not known, and he was at a loss to conjecture of what use they were to the animal. Mr. Charlesworth then exhibited a number of specimens from the Suffolk diggings. He stated that between Woodbridge and Ipswich there was a belt of country known locally as the Crag, consisting of a bed of shell-sand varying from forty to fifty feet in thickness. This sand had long been used by the farmers to spread over the soil, and the heavy soils had been benefited by it. A number of curious dark stones were found in the sand, and were formerly only used as road metal. In 1845 Professor Henslow suggested that they might be the fossil dung of sharks and other creatures inhabiting the sea, of which the Crag was the ancient bottom. The analysis of the stones showed that they contained 50 or 60 per cent. of phosphate of lime, and at Professor Henslow's suggestion they were ground, and on being spread over the land were found to have the effect of ordinary guano. There were now many millionaires in Suffolk who had made their fortunes entirely by converting these stones into manure. Although fossil shells and fishes teeth had been obtained from the Crag by naturalists for hundreds of years, it was only recently that the teeth of mastodons, rhinoceroses, hippopotami, deer, tapirs, and other land animals had been discovered. These were mineralised in a most beautiful way, quite unlike any of the fossil teeth from the ordinary Thames Valley gravels, or other deposits in which mammoth teeth were found. At the time when the Suffolk Crag formed the bed of the sea, the rivers carried down the carcasses of land animals into the sea, where their flesh was probably devoured by the sharks and other fishes. The bones had disappeared, but the teeth remained mineralised in a perfectly unique manner. The most remarkable tooth was that of

the mastodon. When Hunter first saw it he said it must have belonged to a carnivorous animal, because the crown bristled with pointed cones, but it was now known that the animal was no more a flesh eater than the elephant. The crown of the tooth was traversed by a series of prominent high ridges which gradually wore down until the surface became almost as flat as that of the molar of an elephant. In the tooth of the English mastodon the crown was divided into ridges between which were supplementary cones that sufficed to distinguish the English from the American variety. Besides the teeth of land animals, there were also the teeth of spermaceti whales and grampuses mineralised in the same manner. He had brought with him a case showing the teeth of the living spermaceti whale cut vertically and polished for comparison with the fossil ones. He also exhibited a copper bullet found lodged in the tusk of an elephant, and a number of sections of the teeth of the walrus. Mr. Charlesworth further stated in answer to the President that he did not know the exact circumstances under which the Siberian tusks were found. Some of them were undoubtedly found in the ice. Such was the position of the famous mammoth of Siberia, upon whose flesh when frozen the wolves and dogs fed. He imagined that a large number of the imported tusks were taken from the frozen soil, but those that were well preserved and of which the ivory was comparatively valuable, were probably taken from the ice.

Mr. COLEMAN referred to another specimen of a bullet in an elephant's tusk, and stated that there was in that case a fistulous opening communicating with the exterior of the tusk.

Mr. CHARLES S. TOMES then read a paper "On the Attachment of Teeth, and on the Nature of the Alveolo-Dental Membrane."

The PRESIDENT said that he had long felt in teaching the want of a clear conception of the early development of the teeth. The development from the sac (as given by Goodsir), the enamel organ, and the papilla, always presented to his mind certain difficulties. According to previous accounts, when the tooth was erupted the sac and the enamel organ came to an end, whereas it was practically known that the enamel received a positive addition to its substance after the eruptive stage. He was glad to find that Mr. Tomes had given so clear a description of the early development of the teeth, for it was only by increased knowledge on that point that an advanced method of treatment could be expected.

Mr. TURNER said he had listened with great pleasure to Mr. Tomes' paper, which was one of a very practical character. With regard to the relation of the alveolo-dental membrane to the nerve pulp, he wished to ask if Mr. Tomes had thought of the question in relation to replantation or treatment by torsion in cases of irregularity. If Mr. Tomes' theory was correct, there was some reason why that mode of treatment should succeed.

Mr. COLEMAN said, Mr. Tomes' definition was the clearest ever given of the origin and formation of the alveolo-dental membrane. Having paid some attention to the subject of transplantation and replantation (which he hoped before long to bring to the notice of the Society), he would suggest that there was a better chance of success in the case of the rupture of a single membrane than in the case of a separation of two membranes which must afterwards unite. Mr. Tomes' remarks were very valuable and deserved the best thanks of the Society.

Mr. SEWILL said Mr. Tomes' researches entirely corroborated those of Legros and Magitot in regard to the development of the teeth ; and it appeared to him that the accounts of that development were now as advanced as the accounts of the development of any other part of the human organism, and had arrived at a point at which very little additional knowledge could be expected for some time to come.

The PRESIDENT, in bringing the proceedings to a close, said the members would agree with him that their best thanks were due to Mr. Tomes, and to the gentlemen who had offered casual communications, especially Mr. Charlesworth.

Correspondence.

We do not hold ourselves responsible for the views expressed by our Correspondents.

Dental Anæsthetics and Heart Disease.

TO THE EDITOR OF "THE LANCET."

SIR,—I have read Dr. Burney Yeo's letter on dental anæsthetics in relation to heart disease with much interest, and feel that he has mooted a question of the greatest importance to the profession and to the public alike. I am convinced that many dangers attendant upon the use of anæsthetics are often overlooked simply because immediate death is not the result of their administration. Considerable experience in the production of anæsthesia by nitrous oxide gas and the consideration of its action convince me that in many cases its use is attended with more or less risk, this risk not being sufficiently realised, inasmuch as the mischief wrought is subsequent to, not, apparently, coincident with, the inhalation of the gas. Dr. Yeo asks "whether the existence of great obstruction to the circulation in the form of valvular disease of the heart counter-indicates the use of anæsthetics?" and if so, "whether nitrous oxide is an exception to the rule?" To these queries I would answer that in all cases of heart disease the greatest caution should be exercised, though I do not think that valvular mischief is that condition in which its administration would be attended with the greatest hazard, nor would the mere absence of a murmur by any means necessarily be a proof of safety in its use. The explanation of the phenomena attendant upon the exhibition of nitrous oxide seems to indicate that the conditions of heart which would render anæsthesia by its means the most dangerous are those in which it is the subject of fatty degeneration, or those in which its structure is flabby, and its coats

relaxed. In cases of death from this agent the right auricle and right ventricle are much distended with blood, and there seems to be every reason for accepting Dr. George Johnson's explanation of its action—viz., that there is, first of all, obstruction of the systemic, followed by a greater obstruction of the pulmonary, circulation, and subsequent engorgement and dilatation of the right side of the heart.

Some recent experiments made with Dr. G. Johnson upon rabbits have convinced me of the truth of this theory, and, indeed, the phenomena exhibited in a person under the influence of the oxide support it quite as fully—firstly, the pulse is firm and tense; secondly, the pulse becomes imperceptible, and lividity simultaneously occurs.

Without entering into details, it may be briefly said that all symptoms may be explained by extreme contraction of the minute pulmonary arteries, with resulting over-fulness and distension of the right cavities and comparative emptiness of the left, the supply of blood and oxygen to the tissues being greatly diminished. In short, we have all the stages of asphyxia rapidly developed as a result of imperfect oxygenation of the blood.

Assuming these explanations to be correct, it is clear how much danger might attend the frequent administration of the gas in cases like those which I have characterised. About the distension of the right heart there is no doubt, and such a strain upon its parietes when enfeebled would alone be sufficient to accelerate disease, whilst death might be caused by paralysis of that viscus. I have seen one case in which there was intermittence of the heart's action for three weeks after anæsthesia induced by this agent, beyond which there was no sign of disease, the symptoms entirely passing off within the period mentioned.

Other conditions, such as hypertrophied tonsils, short necks in plethoric people, should all be considered in using nitrous oxide gas, especially where there is reason to suspect cardiac mischief. Finally, I believe it offers many advantages when used for short operations, provided that it be administered with caution and skill; but I fully agree with Dr. Yeo that "no unqualified person should be permitted to make use of anæsthetic agents," whilst I would warn those who do so of the consequences they would incur should any fatal accident arise—if a sense of their moral responsibility be insufficient to deter them from using agents empirically

which may be dangerous in the present, but still more so in the future. Medical men could prevent many of the dangers to which Dr. Yeo has alluded by warning their patients of the risk they run in receiving anæsthetics at the hands of those not qualified to administer them. He alludes with satisfaction to the new "Association of Surgeons Practising Dental Surgery." I trust that it may do much to elevate the status of oral surgery, not only by improving education, but by making all take a higher estimate of the legitimate scope of that specialty.

I am, Sir, your obedient servant,

S. HAMILTON CARTWRIGHT.

Old Burlington Street, May 1st.

TO THE EDITOR OF "THE LANCET."

SIR,—If you will kindly afford me a small space in your valuable journal, to answer some of the questions asked by Dr. Burney Yeo in your last number, I will endeavour to be as brief as possible. I think it is now allowed by the profession in general that, in those cases in which a capital operation is necessary, the shock to the patient is likely to be attended with more risk than attends the administration of an anæsthetic; hence, for my part, I should not decline to anæsthetise a patient suffering from any organic disease whatever. With reference to the special case mentioned by Dr. Burney Yeo, in which there was great obstruction to the circulation, in the form of valvular disease of the heart, I believe all will allow that any agent which increases that obstruction in itself, or adds to it, by taking away the power of the muscular force of the heart to overcome the obstruction, must have a deleterious effect; and therefore, in this case, the anæsthetist would do well to avoid using either chloroform or bichloride of methylene, which tend to depress the heart, and select nitrous oxide or ether, which add to the force of the heart's action and stimulate it.

It is well known that the emotion of fear may in itself be fatal in cases, without any cardiac mischief, and therefore, in answer to the second part of the first question, I would say,—before you proceed to the administration of any anæsthetic, endeavour to get the confidence of your patient, and let him feel that he can trust you, then put him *thoroughly and completely* under the influence of the anæsthetic. I believe there would be some risk if the

patient were only partly anæsthetised, for then the system would be cognisant of the unfelt pain of the operation, muscular rigidity take place as a reflex action, and thus, acting by pressure on the bloodvessels, causing greater obstruction to blood circulation, might produce a fatal result.

In almost all the patients who have given me a history of having been nervous and hysterical after some previous administration of the nitrous oxide, I have almost invariably found either that they have been pondering over and dreading the operation for some days, and passing sleepless nights, or that just as they have been recovering sensation, one or two teeth have been extracted, and although on awakening they will not remember anything about the operation, yet the unrecognised pain has produced a most intensely vivid and painful dream, the effects of which may have been persistent for days.

I have often given gas to patients in whom a loud cardiac bruit was present, and I have never known any ill consequences follow when the plan I have advocated above has been adopted. At the present time I regard nitrous oxide and ether as by far the safest anæsthetics in use; but I unhesitatingly say that, at some future time, if the practice of allowing them to be given by unqualified and incompetent persons continues, fatal results must be expected.

Having answered that portion of the letter which relates to the anæsthetic part of the question, I leave the remainder to be replied to by those dentists who are in the habit of attempting to do two things well at the same time—viz., administering the anæsthetic and extracting the teeth.

Believe me, faithfully yours,

WOODHOUSE BRAINE, F.R.C.S.,
Anæsthetist to Charing-cross Hospital and
the Dental Hospital of London.

Maddox-street, Hanover-square, May 2nd.

New Inventions.

A NEW OSTEOPLASTIC.

Messrs. Ash and Sons have brought out a new Osteoplastic, called the Rock Cement. It is even in texture, made in various tints, sets very hard, and promises well. How it will last time alone can show.

Its chief merit, as it appears to us, is the extreme uniformity of texture. This induces us to look forward to its being more successful than those that have been brought out hitherto.

THE DENTAL SURGEONS ATTACHED TO THE
VARIOUS HOSPITALS OF LONDON ATTEND AS
FOLLOWS :—

Dental Hospital of London	-	-	-	Daily, 9 a.m.
National Dental Hospital	-	-	-	Daily, 9 a.m.
Charing Cross	-	-	-	Mon., Wed., Fri., 9 a.m.
*German	-	-	-	Thur., 10 a.m.
*Great Northern	-	-	-	Wed., 2 p.m.
Guy's	-	-	-	Thur., 12 noon.
King's College	-	-	-	Tues., Fri., 10 a.m.
London	-	-	-	Tues., 9 a.m.
Middlesex	-	-	-	Daily, 9 a.m.
St. Bartholomew's	-	-	-	Friday, 9 a.m.
St. George's	-	-	-	Tues., Sat., 9 a.m.
St. Mary's	-	-	-	Wed., Sat., 9 a.m.
St. Thomas's	-	-	-	Tues., Fri., 10 a.m.
University College	-	-	-	Wed., 10.30 a.m.
*West London	-	-	-	Tues., Fri., 9.30 a.m.
Westminster	-	-	-	Wed., Sat., 9.15 a.m.

Hospitals marked * have no school attached to them.

DENTAL HOSPITAL OF LONDON.

CASES TREATED FROM APRIL 1ST TO APRIL 30TH, 1876.

Extractions.	Children under 14	-	-	-	-	341
	Adults	-	-	-	-	529
Under Nitrous Oxide	-	-	-	-	-	243
Gold Stoppings	-	-	-	-	-	150
White Foil ditto	-	-	-	-	-	26
Plastic ditto	-	-	-	-	-	238
Irregularities of the	Teeth treated surgically and					
mechanically	-	-	-	-	-	22
Miscellaneous Cases	-	-	-	-	-	168
Advice Cases	-	-	-	-	-	125

Total - - 1842

JAMES MERSON, *Dental House Surgeon.*

The following Publications have been Received :—The Dental Register.—Johnston's Dental Miscellany.—Le Progrès Dentaire.—Le Progrès Médicale.—The Dental Cosmos.—The Pennsylvania Journal of Dental Science.—The Missouri Dental Journal.—Deutsche Vierteljahrsschrift.—Correspondenz Blatt.—Boston Journal of Chemistry.—The Dental Advertiser.—The London Medical Record.

TO CORRESPONDENTS.

ALL communications intended for the Editor should be addressed to the care of Messrs. SMITH, ELDER, & Co., 15 Waterloo Place, Pall Mall. All inquiries respecting Advertisements and Subscriptions should be sent to Mr. GEORGE BUTCHER, 4 Crane Court, Fleet Street, E.C.

THE
Dental Manufacturing Company,
LIMITED,

Have the pleasure to inform the Members of the Profession that they have purchased the Premises, Business, Plant, and Stock, &c., of the late

W. T. TAYLOR,
25 BROAD STREET, GOLDEN SQUARE,
LONDON, W.

To make the premises suitable for the extended business of the Company several important alterations and additions will have to be made, which will occupy till towards the end of May; but during that time, to meet immediate demands, business will be continued as usual.

Application Forms for Shares may be obtained at either of the Company's

DEPOTS:—

25 BROAD ST., GOLDEN SQ., LONDON, W.
71A GROSVENOR STREET, MANCHESTER.

All communications for the Secretary (MR. R. BREWSTER) to be addressed, for the present, to 71A, GROSVENOR STREET, MANCHESTER.

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HRA:

Review of Dental Surgery 4(1875-76)

NAME OF BORROWER

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